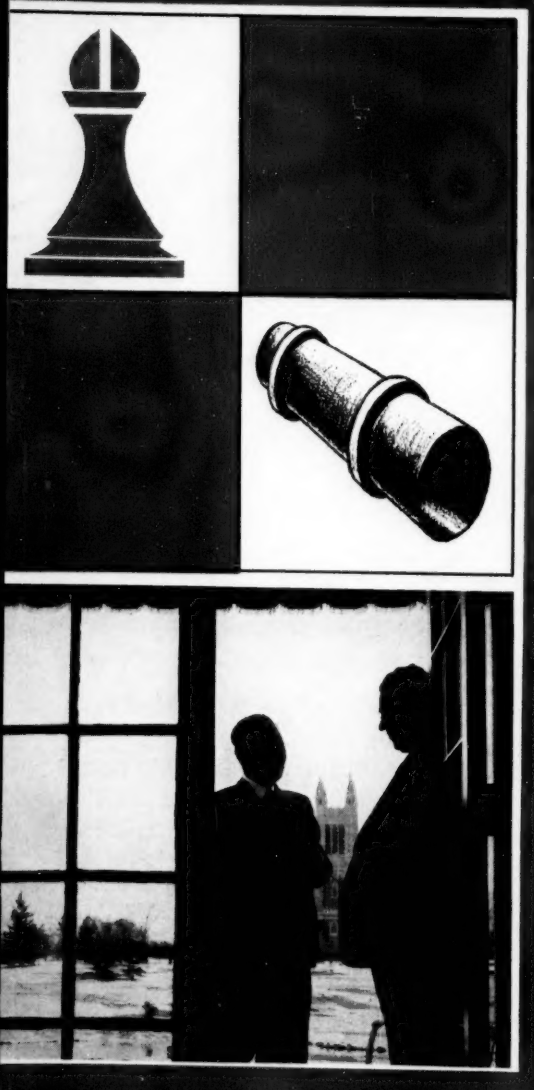
Chemical Week



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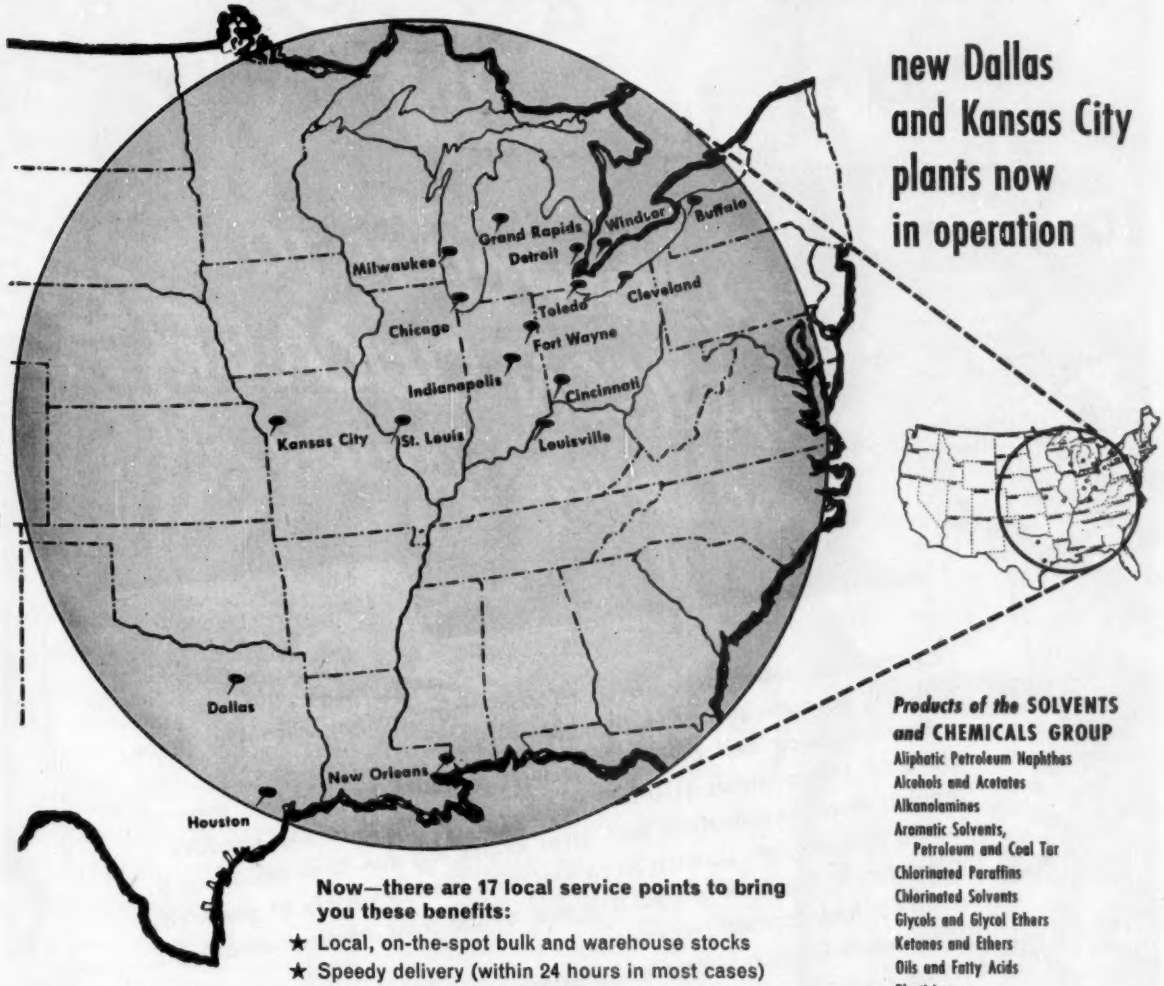

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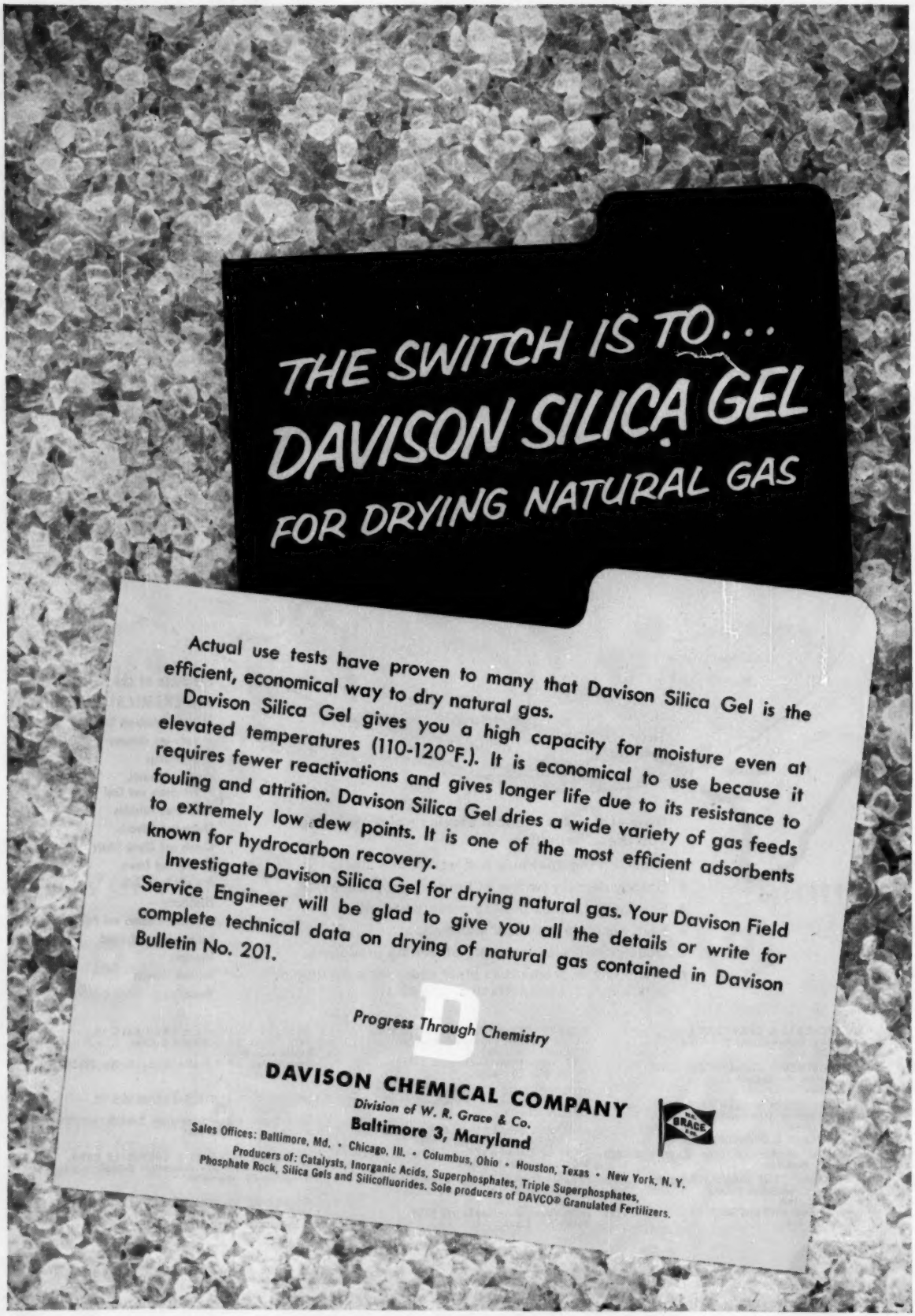
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Chemical Week

TOP OF THE WEEK **February 11, 1956**

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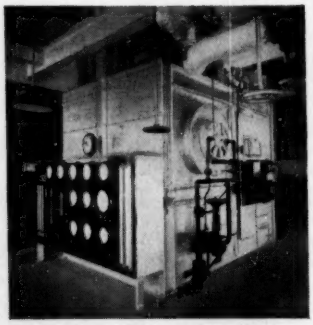

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Chemical Week

February 11, 1956 *Vol. 78, No. 6*

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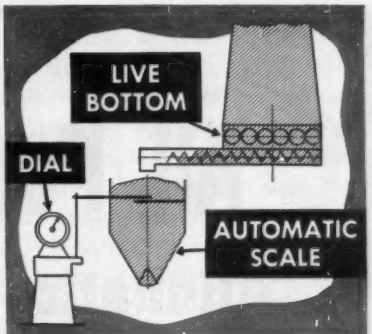

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OPINION . .

Unsung Workers

TO THE EDITOR: Your story on the cosmetics group at Food & Drug (*Jan. 28*) pleased me very much, for I like to see recognition given to government workers. I'm a career government man, and believe me, we get a lot more criticism for wasting taxpayers' money than recognition for the necessary work we do. . . .

NAME WITHHELD
Washington, D. C.

Industry often chafes—and often justifiably—at the taxes it pays and the restrictions it must work under. But the industry men we know are all mindful of the excellent work carried out for them and with them by many government bureaus and agencies.—ED.

Doesn't Grow on Trees

TO THE EDITOR: I was very pleased to see your recent story (*Jan. 28*) on a youngster running a chemical firm under the Junior Achievement program.

I have been in the chemical business for 34 years, and much of the time it's been hard work, and I tell you I am appalled by the ignorance of our economic system displayed by many of today's young people. They get their 10¢ a week allowance when they toddle off to school, and by the time they're in college they expect $2,000 a year or more and sometimes a car to boot, and they never stop to ask where the money comes from. For all they know, it grows on trees.

It's no wonder that many of them are attracted by the fancy theories of socialism and communism. They know neither the responsibilities of working for a living, nor the rewards of perseverence and hard work.

I'm sure that most of your readers, like myself, believe heartily in our capitalistic economic system, but what about the new generation? It's only by

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: H. C. E. Johnson, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

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training them in it through such programs, letting them learn its demands and rewards by actual doing, that they will learn not only to accept it but also to fight for it as the only practical, fruitful way to organize our economy. These boys will learn that money doesn't grow on trees, but that the prizes are there for the persevering.

HARVEY W. TAYLOR
Chattanooga, Tenn.

Sales Staff Only

TO THE EDITOR: Recently, Pittsburgh Coke & Chemical and Koppers reached an agreement whereby Koppers is to take over the marketing of certain dyes formerly marketed by Pittsburgh Coke & Chemical. . . .

Your Jan. 21 issue . . . reported that Koppers' acquisition of Pittsburgh Coke & Chemical Co.'s sales activities in the textile dye field included Pittsburgh Coke's phthalocyanine pigment program and its technical staff for those products. The Koppers acquisition was confined entirely to sales personnel for the textile field. Pittsburgh Coke & Chemical Co. will continue the development and manufacture of phthalocyanines, which will be sold through its Industrial Chemicals Division. . . .

GEORGE VAN GUNDY
Manager, Public Relations Section
Koppers Company, Inc.
Pittsburgh, Pa.

We should have said "technical sales staff" instead of "technical staff."—ED.

Sugar by Ion Exchange

TO THE EDITOR: Under the department "Washington Angles" (*Jan. 7*) there appears the following item:

> "Ion-exchange resin makers may find a broader market in sugar production. A research and marketing advisory group has recommended a study by the Agriculture Dept. on whether resin use can lower sugar production costs."

This has the earmarks of a journalistic scoop, but one that rather baffles us, inasmuch as the Chemical Process Co. has been promoting the use of ion-exchange resins for the refining of sugar solutions since about 1938, and has achieved a moderate amount of success in the field. However, the news flash just quoted appears to indicate that something spectacular is in the offing.

You may care to peruse past issues of your own sister periodical for evidence that the ion-exchange refining of sugar solution has not completely escaped journalistic attention; in Jan. 1955, *Chemical Engineering* published an article under the heading "Ion Exchange Sweetened Sugar" describing the successful ion exchange operation at Layton, Utah.

So far as we are aware, all aspects of ion-exchange refining of sugar juices have been rather well analyzed, indicating that this technique is of value to the sugar industry when it is desired to impart extra quality to the sugar, whether in the granular or liquid form, but has rarely been successful when it was desired merely to secure extra yields of sugar (Layton is the one exception).

Sufficient performance data upon the ion-exchange refining of sugar juices are available from our field experience to allow us to estimate rather closely the cost of such mundane things as regenerants, resin replacement, etc., even when employing such advanced techniques as mixed beds or reversed deionization. . . .

B. N. DICKINSON
Technical Director
Chemical Process Co.
Redwood City, Calif.

Both we and USDA are certainly aware that ion-exchange resins have been used in sugar refining. All we reported is that the Advisory Committee set up by USDA feels that USDA workers should make their own study as to whether sugar production costs can be lowered by using resins.—ED.

Brazilian Eucalyptus

TO THE EDITOR: In a letter to the editor (*Dec. 10*) Mr. John Armstrong casts some doubt on information reviewed in your business newsletter about rapid growth and short-cutting cycles of tropical pulpwoods.

Though it is true that eucalyptus pulped in Australia and New Zealand is being cut at 200 years of age, the same does not hold for eucalyptus pulping in this country (Brazil). Actually, in Brazil the eucalyptus tree is cut after 6 to 8 years maximum, and, as it is planted 7 ft. apart in rows 7 ft. apart, the yields of pulpwood obtained per acre and year are tremendous, probably 10 times higher than in British Columbia.

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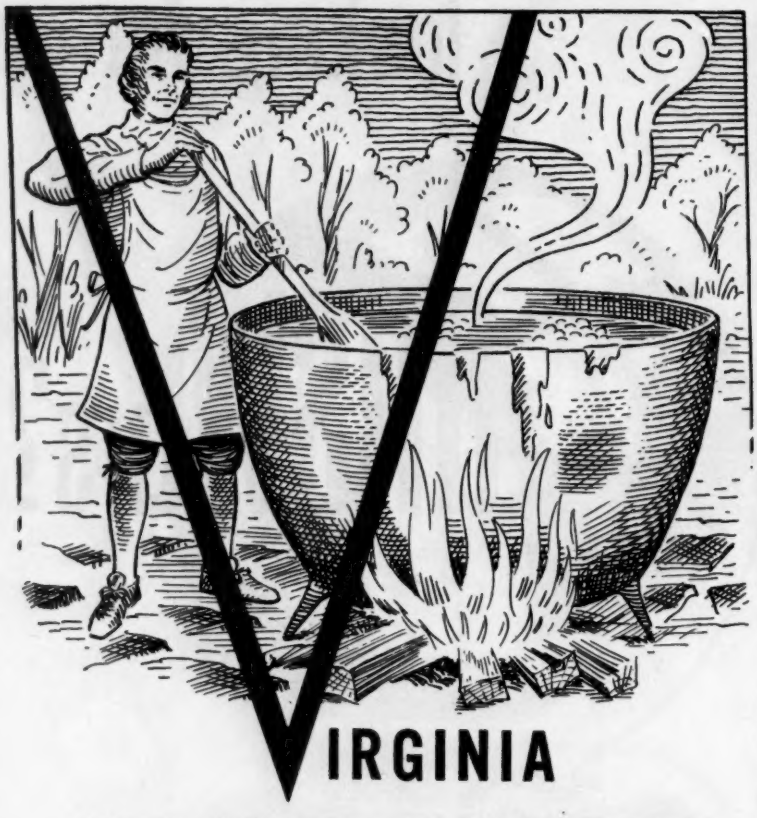

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OPINION . . . . . .

Eucalyptus has been pulped commercially in this country for many years. It was introduced to Brazil from its native Australia some 50 years ago and was planted originally for its fuel value. It has been stated that there exist more than 1 billion eucalyptus trees in the state of São Paulo alone, which would be enough to support forever a pulp industry with a production of 10 times the yearly Brazilian consumption of pulp.

A very good review about eucalyptus in Brazil can be found in a report by a United Nations team, published in 1954 under the title of "Possibilities and Development of the Pulp and Paper Industry in Latin America."

NORBERTO LEDERER
São Paulo, Brazil

Wayward Decimals

TO THE EDITOR: You show a diagram (*Jan. 21, p. 19*) of the production of soda ash from 1945 to 1955. Your caption shows the production is in millions of short tons. Should not your ordinate be 4, 5 and 6, instead of 400, 500 and 600? In other words 5,200,000 short tons of soda ash were produced in 1954 instead of 520,000,000 short tons as indicated on your diagram.

C. D. LOOKER
Director of Advisory Service
International Salt Co., Inc.
Watkins Glen, N. Y.

Right.—ED.

Beats Tobacco

TO THE EDITOR: We note with interest the picture and description of a polyethylene greenhouse (*Jan. 21*).

We feel you should give credit to the inventor, Dr. E. M. Emmert, professor of horticulture at the University of Kentucky, Lexington. Dr. Emmert has been working on this project for some eight years, and has demonstrated that in a plastic greenhouse Bibb lettuce, Kentucky wonder beans, tomatoes and other vegetables can be grown in Kentucky as high-price, out-of-season crops that will yield a larger profit than does tobacco. This is vital to Kentucky's economy, since our farmers are too dependent on tobacco as their only "cash crop."

Tobacco is under federal control, but in spite of repeated and drastic cuts in acreage, is steadily overpro-

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Products are improved. Processes are more efficient. And these advantages cost no more, as Reynolds now offers R-2003 Calcined Alumina of top ceramic quality—and at the price of metallurgical grades. In the field of ceramics and refractories, this new product represents a lowering of materials cost.
Reynolds R-2003 Calcined Alumina has lower impurities, less water, reduces dusting and minimizes shrinkage.
Following the introduction by Reynolds of all white organic free hydrated alumina at regular prices, R-2003 is further evidence of Reynolds pioneering in the chemical industry.
R-2003 Product Data Sheet is available on request. Samples for testing will be provided. For complete information on R-2003 and other Reynolds Chemicals, call the nearest Reynolds Office, listed under "Aluminum", in your classified telephone directory, or write Reynolds Metals Company, P. O. Box 1800 CM, Louisville 1, Kentucky.

Write for Data Sheet R-2003

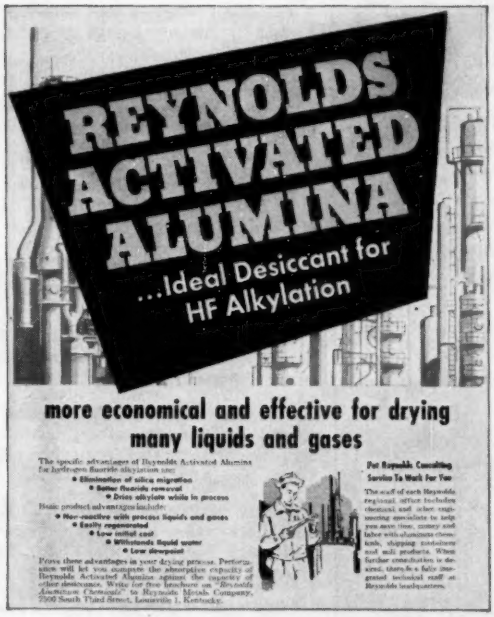
Improved Aluminas for Expanding Markets

- All white hydrates
- High quality desiccants
- Highly calcined aluminas

These new aluminas made important news in the chemical industry in the past three years. Products were improved, processes were made more efficient . . . without increasing costs.

The three announcements reproduced on this page speak volumes for Reynolds pioneering in the field of aluminum chemicals.

If you would like to know more about these developments—and others—call the Reynolds office listed under "Aluminum" in your classified directory or write for Product Data Sheets. *Reynolds Metals Company, P.O. Box 1800-CM, Louisville 1, Kentucky.*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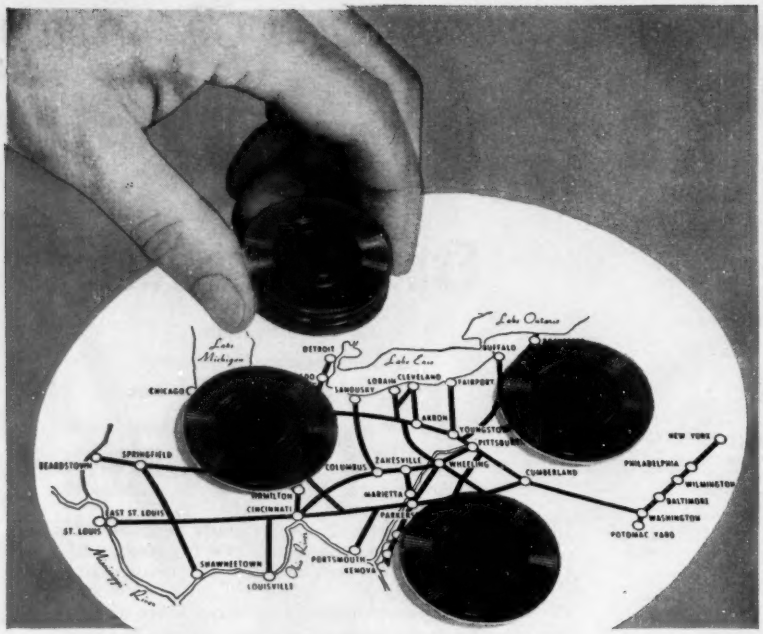

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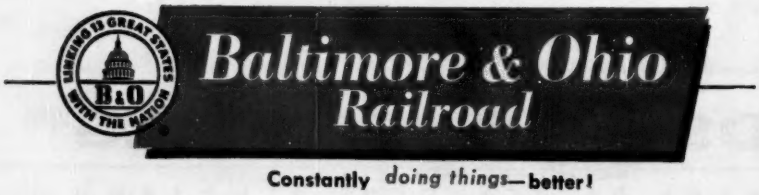

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Armour Research Foundation, automation conference, Commons Building, Chicago, Feb. 14-15.

American Institute of Mining and Metallurgical Engineers, annual meeting, Hotel Statler and Hotel New Yorker, New York, Feb. 19-23.

Technical Assn. of Pulp and Paper Industry, annual meeting, Commodore Hotel, New York, Feb. 20-23.

Chemical Institute of Canada, 10th Divisional Conference, Royal York Hotel, Toronto, Feb. 23; Sheraton-Mount Royal Hotel, Montreal, Feb. 24.

American Institute of Chemical Engineers, Statler Hotel, Los Angeles, Feb. 26-29.

Cleveland Engineering Society, 13th annual Machine Design Conference, Cleveland, March 5.

Chemical Institute of Canada, 6th Divisional Conference, Chemical Engr. Division, Guildwood Inn, Sarnia, March 5-7.

Society of Plastics Industry, 14th annual conference, Sheraton-Brock Hotel, Niagara Falls, Ontario, March 8-9.

National Assn. of Corrosion Engineers, annual convention, Hotel Statler, New York, March 12-16.

Synthetic Organic Chemical Mfg. Assn., luncheon, Palm Terrace Suite, Hotel Roosevelt, New York, March 13.

American Society of Mechanical Engineers, aviation conference, sessions on high-temperature rocket engines, Hotel Statler, Los Angeles, March 14-16.

Society of Plastics Industry, 13th annual Pacific Coast Section Conference, St. Francis Hotel, San Francisco, March 27-April 2.

Midwest Research Institute, symposium for management on applications of analog computers, University of Kansas City, Kansas City, Mo., April 10-11.

American Oil Chemists' Society, Shamrock Hotel, Houston, April 23-25.

Assn. of Consulting Chemists & Chemical Engineers Inc., symposium and banquet, 5:00 p.m., Hotel Belmont Plaza, New York, April 25.

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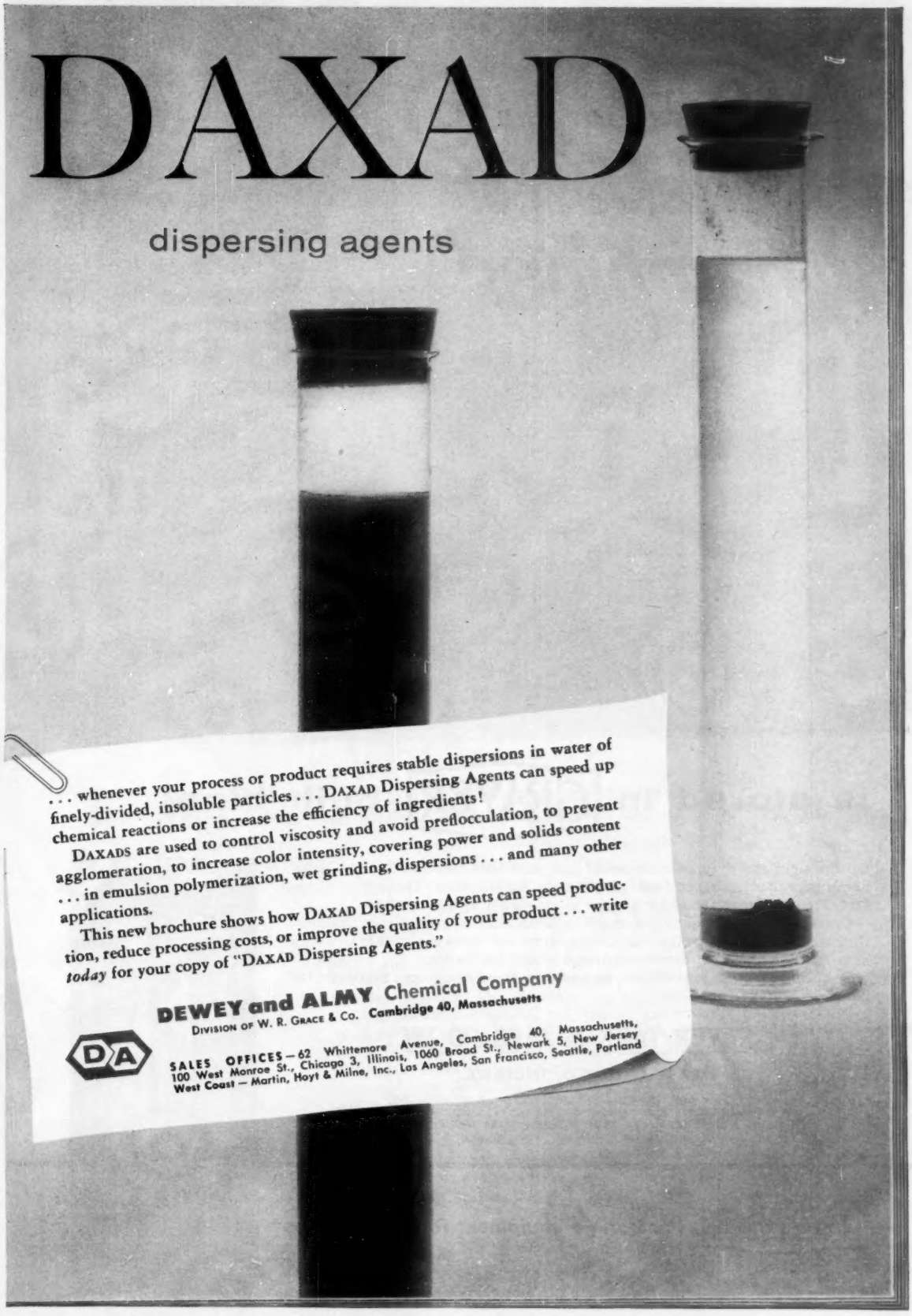

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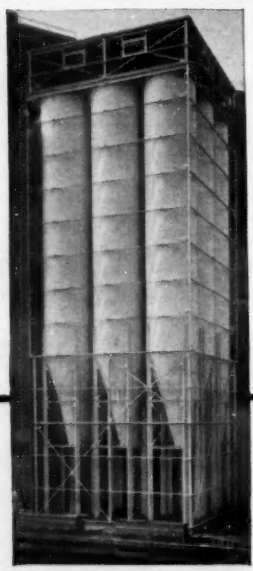

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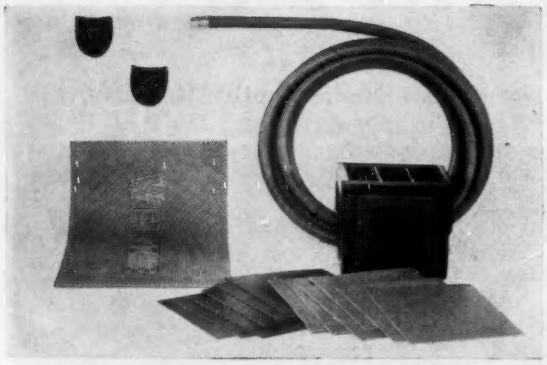
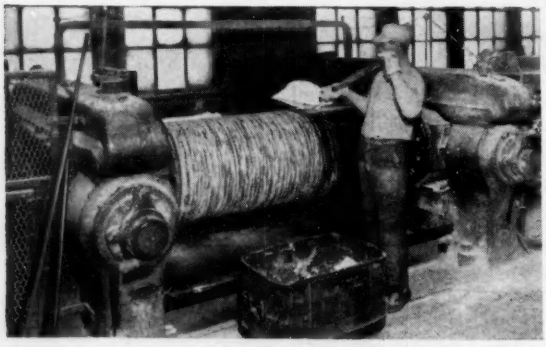


Properties of A-C* Polyethylene – Tests in laboratories and by commercial operators show that low-molecular-weight, low-viscosity A-C Polyethylene has solved many problems in rubber processing. A-C Polyethylene, available in pellet and powder form, is easy to handle in your plant equipment. Emulsifiable grades are also available.

Shrinkage Greatly Reduced – Addition of A-C Polyethylene to milled stocks can sharply reduce shrinkage, permitting adherence to closer dimensional tolerances. In one case, shrinkage of a synthetic formulation was reduced by 75%.



Excellent Detackifying Properties – A-C Polyethylene is a superior detackifying agent, especially at elevated Banbury, mill and calender temperatures of 200°F. and higher. This property is particularly valuable when compounding synthetics. It has demonstrated exceptional qualities as a mold release; as a lubricant it allows higher operational speeds.

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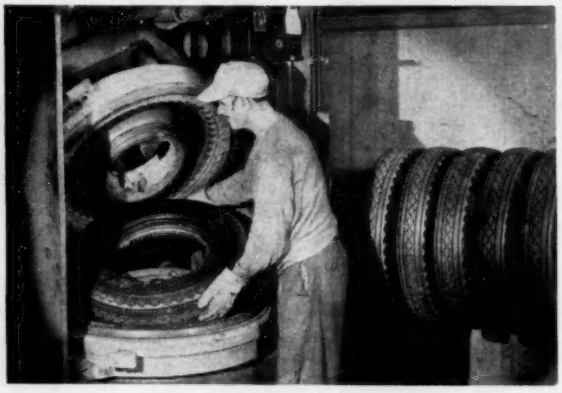

Information and Samples Available – Preliminary technical data is available in an eight-page brochure. Samples of A-C Polyethylene are also yours for the asking.

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"Best in history—sets new record."

That's routine comment these days as 1955 earnings figures pour in.

Union Carbide's sales were $1.19 billion, 28% greater than in 1954, and 16% above 1953—Carbide's previous record. And net profit was up to $141 million, an increase of 57% over 1954.

Standard Oil of New Jersey stockholders, at a special meeting called to approve a stock split, heard that company profit should reach $717 million for the year, up 23% from 1954's $585 million. Petrochemical sales, too, were above those of any previous year—representing about 6% of total domestic sales.

Other earnings figures:

Stauffer Chemical netted $12.3 million, on sales of $145.5 million. Sales were up 24%, profits up 34%.

Hooker Electrochemical, consolidating earnings of Durez Plastics and Niagara Alkali, showed a record $94 million in sales, up 21%. Net for the year was $10.6 million, an increase of 29% over comparable 1954 figures.

Rohm & Haas, in its preliminary earnings report, indicated $162 million in sales (up 13%), and $17.7 in net, a boost of 42%.

Pennsylvania Salt increased sales 17%, to $67.8 million, with a profit of $3.5 million, up 3%.

Dow Chemical, just past the middle of its fiscal year, expects "the most profitable year we have had in some time," as President Leland Doan put it to the San Francisco security analysts society.

Dow, incidentally, plans to introduce a new synthetic fiber for clothing use sometime in the next 11 months.

•

From oil into chemicals? No, from chemicals into oil. This reversal of the popular trend was the aim of Freeport Sulphur last week, as it set up a new division, Freeport Oil Co., which will handle both exploration and production of oil and gas for the company.

•

The foreclosure on properties of Westmoreland Manganese Corp. will go ahead as planned (*CW Business Newsletter, Feb. 4*). The Eighth Circuit Court of Appeals at St. Louis denied a management petition to stay the scheduled foreclosure.

And a 63-cents-on-the-dollar settlement has been offered creditors of the Metalectro Corp. (Laurel, Md.). A prospective purchaser of the firm, which has sparked development work on unsymmetrical dimethylhydrazine, will take over operations only if the company is free from prior claims.

•

Top expansions this week concern ethylene oxide. While Wyandotte is purchasing a Gulf Coast site for oxide and ethylene glycol production (*p. 22*), Carbide and Carbon Chemicals and Dow Chemical will both expand Texas plants.

Carbide is adding enough oxide and glycol capacity at Seadrift to produce an additional 65 million lbs./year of glycol. This will bring the plant's total capacity—on an ethylene oxide basis—to better than 200 million lbs./year.

Business
Newsletter

(Continued)

Dow will boost oxide production by 30 million lbs./year at its Freeport location. This expansion, due in by late 1956, is in addition to the 60-million-lbs. oxide-glycol increase decided upon last September.

A new chlorine-caustic plant is planned by Shawinigan Chemicals. It will be built at Shawinigan Falls, adjacent to the sulfuric acid plant now on the company's expansion docket.

And a new 300-tons/day chemical pulp mill for high-alpha cellulose is likely for Sitka, Alaska. The U.S. Forest Service has awarded a "preliminary" contract—contingent on plant construction—for 55 years of cutting rights on 5.25 billion board ft. of lumber to a Japanese concern, Alaska Pulp Co., Ltd. Minimum cost of the plant, which will use magnesium oxide pulping, would be $40 million. The concern expects to ship the pulp to Japan for conversion into rayon and other products. There's a chance, however, that the pulp itself would be sold in international markets.

•

There are "serious obstacles" in the path of many chemical companies that want to get into atomic energy. That's the report from the Manufacturing Chemists' Assn., which has just surveyed members on the question. While companies that have done contractual work for the Atomic Energy Commission have developed "reasonably effective" atomic research and development programs, the remaining companies—"a very significant segment" of the industry—find security classifications and patent regulations an obstacle to their entrance into atomic energy activities.

•

Vick Chemical is buying National Drug Co., employees of the latter have been advised. Stock of the Philadelphia ethical pharmaceutical maker is held by a small group, all of whom have agreed to the sale.

Spencer Chemical, too, has made a purchase—the assets of Parker-Browne Co. (Fort Worth, Tex.), a producer of liquid and solid carbon dioxide. The company will be integrated with Spencer's present carbon dioxide operations.

•

Three stock splits are in the news. Allied Laboratories (Kansas City, Mo.) will split its common 2 for 1, and a similar split will be carried out by its subsidiary, the Pitman-Moore Co. (Indianapolis).

American Potash will split both classes of its common stock 2½ for 1.

A different type of split also involves American Potash. Come midyear, the company will no longer be represented by Wilson & George Meyer & Co., which has been handling various Western sales areas. Decision was "mutually agreeable," because of development of "divergent interests."

•

. . . And we quote . . .

"We can produce aluminum cheaper here than anywhere in the world," said Olin Mathieson's R. Carter Dye, speaking to Ohio Valley businessmen. "I don't know why American industry has been so long discovering the industrial assets the area has to offer."

"Monsanto's annual sales will reach the $1-billion mark by 1965, and it might be sooner," reported Vice-President Francis Curtis in Springfield, Mass. "When I think of that billion-dollar figure, it scares the life out of me—I don't know where we're going to get the people."

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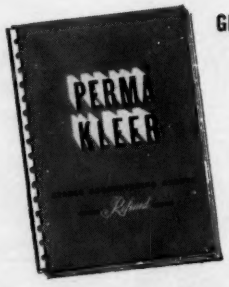

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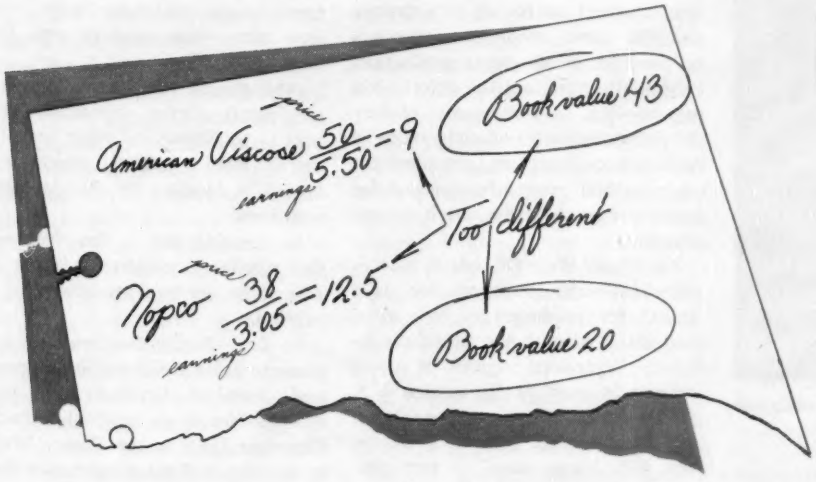
February 11, 1956 • Volume 78 • Number 6

Chemical Week



In Lieu of Merger—Chemical Expansion

In coming months, American Viscose Corp. will be edging more and more toward a broader chemical base. And two roads are open to Avisco to achieve this end: (1) merger with chemical firms; (2) diversification and expansion on chemical items. But its decision last week to start making cellophane at Marcus Hook, Pa., indicates that the latter road is the present choice.

Merger might seem easy; Viscose has talked the idea over with Monsanto, Hercules, and, most recently, Nopco Chemical. But the standard financial figures (*above*) show why such merger may not be too easy.

What do they show? Only that American Viscose—despite its size—would be on the defensive, would have to pay a stock premium to reach some equitable merger basis. Take Nopco, for example. Though there's not too much difference in stock selling prices, two other figures show the penalty Avisco might have to pay. In order to agree to a merger, a Nopco stockholder would want just about the same type of earning on investment (with price/earnings ratios what they are, that would take over $50 for $38 worth of stock). And to get equivalent book value, a Nopco stockholder would want over $80 worth of Avisco stock for his $38 share.

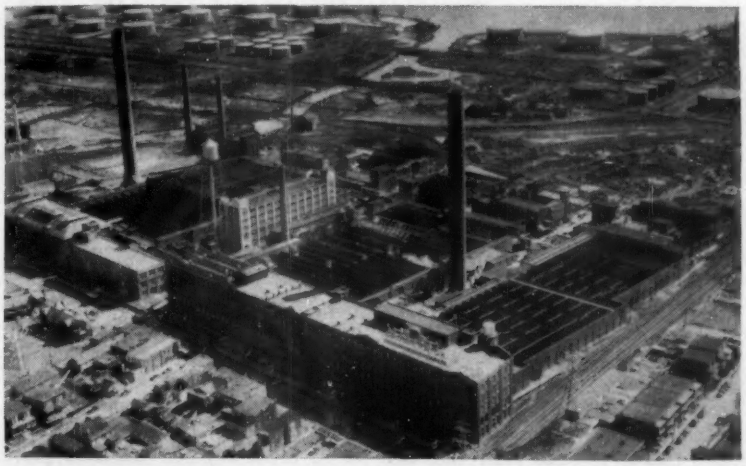
So, for now at least, Avisco will head for broader diversification and expansion into chemical fields, and out of textile dependents.

First move in that direction came late last week when Viscose directors, meeting in New York's Empire State Building, voted to reopen the company's Marcus Hook plant—but to make cellophane instead of rayon textile yarns.

Switching the facility to cellophane will step up the company's cellulose film capacity by 50%, by adding 50 million lbs./year potential production to the 100 million lbs. already issuing from its Fredericksburg, Va., unit.

And later this month, a 50-million-lbs./year rayon staple expansion will be completed at Parkersburg, W. Va. This will be followed by a 30-million-lbs./year hike of staple output at Front Royal, Va.

Moves like these are geared to push Avisco further along the line toward less dependence on its more traditional markets—apparel yarn (now 43% of sales), tire yarn (23%).



REOPENED: Avisco, at Marcus Hook, Pa., in 15 months—cellophane.

WYANDOTTE'S SEMPLE: His option points the way south.

An Itch for Expansion

Early this week, Bob Semple and Bert Cremers were far away from their home base of Wyandotte, Mich. Their visit—to a 700-acre tract of land 20 miles south of Baton Rouge, La.—was far more than an ordinary business trip.

If they approve of the location, and get board-of-directors approval, Wyandotte Chemicals will purchase the presently optioned site near the Mississippi River, and there locate the first major manufacturing plant it has ever erected outside of Michigan. To be produced: chlorine, caustic soda, ethylene oxide, ethylene glycol. And this would be only the start of a manufacturing complex.

To Wyandotte President Semple and Vice-President Cremers, it's the most natural move in the world—one that's been coming for some time.

In fact, when the company was last pondering a chlorine-caustic expansion three years ago, the location choice was between Wyandotte and a then newly acquired site at Dille, O., a few miles down the Ohio River from Moundsville, W. Va. When Michigan got the nod, it was with the proviso that the 200-tons/day unit would be the last chlorine-caustic expansion at the home plant.

This time, Dille was again considered as a possible plant site, but it lost out to Louisiana as much as anything else because of the attraction of such nearby ethylene sources as Standard Oil's Baton Rouge refinery. While such details as unit capacities have yet to be set, it's definite that the direct oxidation route will be used for oxide-glycol production. (Wyandotte now uses the chlorhydrin process—but, as a consumer of substantial quantities of ethylene oxide in its nonionic detergents, considers the other method more advantageous for a new unit such as the one it is now planning.)

The Water Way: Of course, accessibility to water transportation is a "must" for producers of bulk commodities. And with the Louisiana location, Wyandotte figures it could compete in most of the eastern U.S. "Of course we'd have a prime interest in the Gulf area," Cremers asserts, "but with barge costs as they are, we'd meet ourselves in Chicago, and perhaps even on the East Coast." (With its Eastern storage facilities, Wyandotte is now able to supply customers in months when water shipment is not possible.)

Too, as a company that's heavily committed, among other things, to merchant chlorine sales, the move will give Wyandotte a chance to supply material to other plants of companies with which it had contracts, but which were previously outside Wyandotte's economic shipping area.

But perhaps most important will be the accentuation of Wyandotte's move into organics. The currently planned units—as Semple puts it—"will form the nucleus about which a substantial and diversified manufacturing activity will grow."

A Bandwagon Rolling

The natural-gas bandwagon is beginning to roll in the Pacific Northwest. And the first customer of major importance aboard is Kaiser Aluminum and Chemical Corp., which, for its ride, has contracted to pay $1 million/year for the next 20 years.

Pacific Northwest Pipeline Corp. will be in the driver's seat, however, expects to make its first gas deliveries to the gas-starved area by July of this year. But Kaiser has already begun immediate conversion of its oil-burning kilns and other equipment at its Mead alumina reduction plant to handle some 8.2 mcf./day of gas.

In the eyes of Pacific Northwest's board chairman, Ray Fish, Kaiser's sign-up is only the beginning of a program to extend natural gas to every industry and home in the Northwest area—with Spokane and Portland first in line.

And though the switch to natural gas could accrue significant profit benefits to Kaiser and other industrial users, even greater opportunities should be in store for Pacific Northwest itself.

In bringing gas to the Northwest, the pipeline company is laying the ground for its own petrochemical expansion.

In fact, Pacific Northwest already plans to build a $20-million ammonia and chemical fertilizer unit (with Phillips Petroleum, as Phillips Pacific Chemical Co.) in the Pasco, Wash., area. Estimated gas consumption there is expected to reach 15 mcf./day.

Reports chairman Fish: "We see an opportunity in Washington and Oregon—an area that never had raw material natural gas—to enter petrochemical operations."

Too, as a highly irrigated farm area, large tonnages of nitrogen are needed for production. Pacific plans to use the ammonia fertilizer plant as a nucleus for much larger and diversified petrochemical operations in the Northwest.

It's conceivable, in fact, that the company's next move may well be into ethylene and polyethylene production, perhaps using Phillips patents.

NORTHWEST'S FISH: His agreements highlight petrochemicals.

An Auspicious Sign in Food

After four years of controversy, chances are better for Congressional okay on new federal controls on use of chemical food additives.

Final approval is still a long ways off. But last week's Congressional hearings gave clear evidence that time has helped narrow the area of dispute on the additives-control issue.

This shows up most clearly in progress toward interindustry unity. For the first time, chemical firms that make and sell additives, and food groups that buy and use them, are putting up a solid front on most key parts of the proposed law.

Long in agreement on fundamental objectives (both industries see need for federally required pretesting), the two industries have composed their differences on ticklish questions of enforcement procedures.

This has led to one happy result. The House Commerce subcommittee on Science and Health, with which any new law must originate, is no longer faced with a baker's dozen of conflicting legislative proposals. Committee Chairman J. Percy Priest publicly commended the food and chemical industries for reaching agreement on one bill. He saw this agreement as an auspicious sign to those who share his "hope" for an early start on an additive law.

The Gap Ahead: But a big gap remains to be bridged. The industry approach runs head-on into basic conflict with the approach taken by the Food & Drug Administration on method of control:

FDA will ask licensing authority on all new chemical additives, and many already in use, at hearings next week.

Food and chemical makers feel compulsory prenotification, pretesting for safety by industry is sufficient. They want no FDA veto on introducing new products.

Key to this dispute is clearance procedure. How FDA and industry part here overshadowed all other issues at the hearings. Views haven't polarized yet, but differences here strike deep philosophical roots, and appear near irreconcilable.

Here's how the two sides lined up:

• FDA position, incorporated in newly drafted H.R. 8748 by Representative Miller (R., Neb.), would duplicate for food additives same tight control scheme of Miller's pesticide act. FDA, through Health, Education & Welfare Dept. Secretary Folsom, names a scientific advisory board to weigh industry test data for adequacy of tests and product safety. The board's findings, while not binding on H-E-W, go back to the Secretary, who issues a ruling defining use of a new additive. If the ruling is adverse, the additive proponent can get departmental hearing. The Secretary makes the final decision "based only on substantial evidence of record" at a hearing, including the advisory board's report.

If H-E-W still turns thumbs down, industry has recourse to the Federal Court of Appeals, which must affirm H-E-W's factual determinations if based on more than a "scintilla" of evidence, and can upset order only if "capricious or arbitrary." This is the customary test for federal agency rulings, but chemical-food groups say it's "unrealistic" for chemical additives.

• Glenn Paxton, lawyer for the so-called "Chicago group" of five food industries, put his finger on industry objections: "An administrative order on a technical subject will almost inevitably be affirmed by the courts on appeal if supported by substantial evidence, even though contrary to the weight of the evidence."

• James Gillet, speaking for Manufacturing Chemists' Assn., pointed up interindustry harmony, told the subcommittee that FDA needs only "enforcement aids." "Sweeping changes," the Victor Chemical official stated, are unnecessary.

CAMERAMEN INCORPO

VICTOR'S GILLET: For old additives, no vague standards.

But he marked the one wide-open difference between chemical and food makers over the bill's so-called "grandfather clause."

As proposed, the bill exempts only those currently used additives "generally recognized among experts qualified by scientific training and experience to evaluate the safety of foods."

"This is an extremely vague standard," said Gillet. It "could swamp the toxicological facilities of FDA and of the nation with work on old additives at a time when new procedures are being initiated for new additives."

A Charted Performance in Rubber

The end of the government's ownership of rubber producing plants may be in sight this week as Congress considers proposals on two facilities:

• Congressional committees seem certain to let stand the already-negotiated sale of the Institute, W. Va., copolymer plant to Goodrich-Gulf Chemicals, Inc., for $11 million.

• Powerful Democrats are backing a new bill to sell outright or lease for a long term the Louisville, Ky., alcohol butadiene plant, last of the government's 51 synthetic rubber plants remaining unsold.

Congressional review of the Goodrich-Gulf purchase of the Institute plant is following the advance form charts. The Senate Banking Committee, after a two-day grilling of Administration witnesses and G-G President Bill Burt, voted down committee chairman Fulbright's veto resolution.

The House Armed Services Committee must act on a similar veto bill introduced by Representative Yates (D., Ill.). Chairman Vinson, a power in the House, is strong for selling the huge, "moth-balled" government plant and is confident of mustering a top-heavy vote against the Yates bill.

Developments so far point to a lack of enthusiasm among top Demo-

crats for making a big issue of the sale. With a Feb. 11 deadline on final action, it's doubtful that hard-core opponents can stir up in either House or Senate the majority needed to block Goodrich-Gulf.

Hand or Bush: Most Congressmen are expected to side with the Administration's view, expressed at the hearings by Assistant Attorney General Stanley Barnes, that "bird-in-the-hand" benefits ($11 million, plus a quick enlargement of rubber capacity) outweigh any potential antitrust "bush."

Sale or lease of the Louisville butadiene plant is being pushed by Senators Barkley and Clements—and an identical measure has been introduced in the House by Rep. John M. Robsion, Jr.

Benefiting by this would be Publicker Industries, the big fermentation-alcohol producer that took a three-year lease on the butadiene plant last March. Publicker sees a big customer for butadiene in the soon-to-be-reactivated Institute plant. But its plans to supply such an account would be more attractive with a long-term lease, if not purchase, of the Louisville plant.

The two plants make a natural tandem, for economic and geographic reasons. There are no major rubber or butadiene plants within hundreds of miles, but Louisville and Institute are near neighbors.

Publicker can meet the competition of lower-cost Gulf Coast butadiene only on its home-grounds, where transportation costs are in its favor. Institute, as a "Johnny come lately" to the private synthetic rubber industry, is faced with this situation: nearly all butadiene plants are straining to meet requirements of GR-S plants with which they are integrated physically or by ownership.

Publicker has some ambitious modernization-expansion plans for Louisville butadiene, which would increase its capacity from 90,000 tons yearly to well over 100,000. It sees a better profit balance ahead if it can make long-term contracts with suppliers of its raw materials, and with purchasers of finished butadiene, including Goodrich-Gulf at Institute.

Such plans would depend largely on obtaining assurance—either by purchase or long-term lease—that Publicker will still be operating Louisville butadiene long after its current lease runs out.

New Medicine for Drugs

Can the drug industry, now fragmented into many specialized trade associations, speak with a single public relations voice? Last week, such an attempt at unity officially began, as Chet Shaw, former editor of *Newsweek,* was appointed to head a yet-unnamed public relations office.

The new program, long under consideration both by companies and by the various drug associations, got under way when George Smith, president of Johnson and Johnson and public relations chairman of the American Drug Manufacturers Assn., announced (1) Shaw's appointment as executive director of the new project, and (2) the establishment of New York offices at 342 Madison Ave.

But several months will elapse before the new organization can assume its industry-wide role. The earliest possible time at which other members of ADMA could pass on the proposal is April. The American Pharmaceutical Manufacturers Assn., with 214 member companies also meets in April; the Proprietary Assn., late in May. The American Pharmacists Assn.—the oldest and largest, membership-wise—can't take any action until the second half of the year.

The majority of the large drug associations will likely come in—some key drug and pharmaceutical companies have been spelling out the need for such an organization for over a year now. However, the full extent of their cooperation is as yet far from assured.

While spokesmen for the Proprietary Assn. and APMA said they would be surprised if the idea were not approved by their member companies. But they also indicated a few sizable reservations:

- To date, no definition of the specific approach to be used by the new organization has been sent to each association—and full participation might hinge on it.
- Assessments of members may have to be adjusted, since the majority are active in two or more associations.

The American Pharmacists Assn., with 18,000 individual members con-

Up Sail for Chemical Progress

. . CLEAR SAILING AHEAD for Chemical Progress Week is the motto of Carbide's Howard Bunn, right, chairman of the New York CPW committee, who guides other committee members around the model room of the New York Yacht Club during the committee's organization meeting. Watching, from left, are Carbide's Tom Featherstone, Celanese's Emery Cleaves, MCA's Bud Lane.

Washington Angles »»

»» **The fertilizer industry fights in vain** against the 7% freight rate increase asked by U.S. railroads. Protests poured in up to and even after the deadline last Friday set by the Interstate Commerce Commission. The industry's argument is that increased costs can't be passed along to the consumer, as can be done with manufactured goods. Barring an unexpected reversal by ICC, the new rate will go into effect Feb. 25.

»» **Government stockpiling of war-essential** commodities such as natural rubber, rare earths, coconut and palm oils, is up for another look-see by Defense Mobilizer Arthur Flemming. Reason: an interdepartmental committee has unanimously recommended stockpile reduction. Flemming's hot potato: how to dispose of surplus stocks without disrupting current markets.

»» **Largest sales increases for 1955** were in chemical process industries, say Commerce Dept. statisticians. Where sales of manufactured items generally were up 13% over 1954, rubber industry sales were up over 20%; chemicals, 18%; and paper, 15%.

»» **Borate shipments to Red China** have caused suspension of four Japanese firms' right to export U.S. goods. The exporters, says the government, schemed to "induce shipment of 88 tons of borax and 100 tons of boric acid from the U.S. to Japan, making false statements to and concealing facts from their U.S. suppliers as to the ultimate recipient of the materials." The suspension will apply as long as U.S. exports controls exist.

---

sisting of pharmacists, teachers and wholesalers, may have somewhat stronger inhibitions regarding the proposal. There the feeling is that while such a program may be necessary to supply the public with an explanation of manufacturers' high drug prices and to combat antiquated feelings of distrust left over from the old patent medicine days, there is still no pressing need to increase the stature of the individual pharmacist in the public eye. However, should the program be expanded to include specific plans for this group it is likely that APA will go along.

ADMA's executive committee representing 20 of the 60 member companies has already broken the ice with a guaranteed annual contribution of $100,000. Smith stresses that parleys with representatives of other groups will take place shortly—the first has been set for Feb. 29—with the names of those members that pledge active support of the program to be announced as soon as possible.

COMPANIES. . . .

National Lead Co. has acquired all the capital stock of Mud Products Inc. on an exchange of stock basis. Mud Products will continue to distribute N.L.'s oil drilling mud materials through warehouses located in the gas and oil producing sections of the U.S.

•

Dorr-Oliver will acquire control of the assets of Merco Centrifugal (San Francisco) in exchange for approximately 50,000 shares of Dorr-Oliver common. The move is intended to broaden markets for Merco's equipment. Most of the San Francisco firm's staff will soon be moved to Dorr-Oliver's Oakland, Calif., plant.

•

Koppers plans to issue 300,000 shares of common stock to help finance a program of property additions, acquisitions and improvements involving outlays of about $33 million. Approximately 80% of this is slated for the company's chemical and tar products divisions.

•

Sinclair Oil has agreed to sell its holdings of Westpan Hydrocarbon Co. common stock to Jalco, Inc. (Dallas). Sinclair will receive over $4.8 million for its holdings, which represent about 53% of Westpan's outstanding shares. The move is a result of a Securities Exchange Commission order requiring Sinclair to dispose of such stock under terms of the Public Utility Holding Company Act.

•

Allied's Barrett Division has acquired Newark Plaster Co. with plants in Kearny and Newark, N.J. Barrett will expand its product line to include gypsum wallboard, lath, sheathing and plaster, now produced by Newark Plaster at its New Jersey plants.

•

Plough Inc. (Memphis) plans to acquire two more large pharmaceutical producers, Musterole Co. and E. W. Rose Co. A merger has been approved by directors of all three firms, and stockholders will vote at special meetings.

•

Santa Cruz Portland Cement has handed down a proposal to sell its cement business for $12 million to Pacific Coast Aggregates Inc., with assets to be distributed to stockholders. If approved, each common share should return $165 to stockholders over a 12-month liquidation period.

EXPANSION. . . .

Thermoplastics: Borg-Warner Corp.'s Marbon chemical division will construct a $10-million plant to produce its butadiene-acrylonitrile-styrene resins at Washington, W. Va. Onstream date: Jan. 1, 1957. Marbon already operates two styrene units at Gary, Ind.

•

Butadiene: In Canada, Polymer Corp. (Sarnia, Ont.) plans a $5.7-million expansion on butadiene for synthetic rubber production.

•

Chemical Pulp: Lummus Co., Canada Ltd. (Montreal) has been awarded a $20-million contract to build for Antler Wood Products Ltd. a chemical pulp mill near White Court, Alberta. Construction should begin this year.

•

Quartz: General Electric Lamp Division will build a $1-million quartz

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processing plant at Willoughby, O. Although most production will be captive, some quartz will be sold to other users. Present GE quartz operations in Cleveland will be shifted to Willoughby.

•

Refractories: A $3-million expansion of refractory and magnesia products is planned by Kaiser Aluminum & Chemical Corp.'s Chemical Division at Moss Landing, Calif., and at Columbiana, O. (now under construction).

FOREIGN. . . . . .

Acetylene/Rumania: A new Hungarian-operated plant is now producing an acetylene-synthesis gas mixture from methane. It is located in the village of Buciumen, 10 miles from Bucharest. Experimental operation of an acetone unit is scheduled for spring.

•

Alkylate/Britain: One of Great Britain's current chemical imports may soon be scratched. Grange Chemical's new $2.8-million plant at Grangemouth has just started full production of 10,000 tons/year of detergent alkylate, an amount that should meet Britain's needs, with a comfortable portion left over for exports. Grange Chemical is a joint venture of British Hydrocarbon Chemicals and Oronite Chemical Co. (San Francisco).

•

Sulfur/Italy: The industrial committee of the Italian Chamber of Deputies has just approved a bill authorizing increased government subsidies to Italy's sulfur industries. The old figure of 9,000 million lire has been raised to 12,000 million. The move is intended to enable the industry to offer sulfur for export at competitive prices.

•

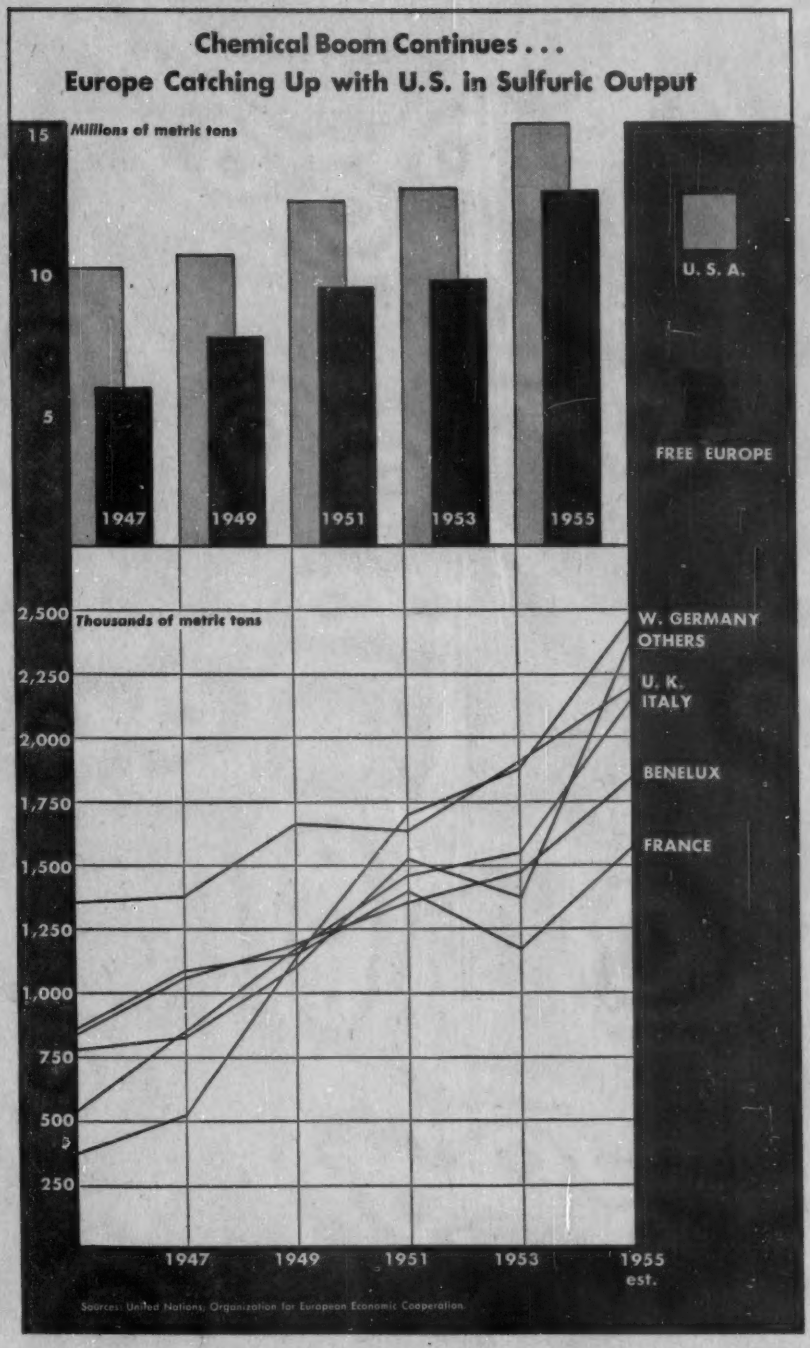
Trade Fair/Britain: London's Olympia Hall will be the scene, April 23-May 4, of a chemical exposition sponsored by the Association of British Chemical Manufacturers.

•

Asbestos Cement/Ceylon: Nearing completion 7 miles from Colombo is Ceylon's first asbestos cement factory. The new company, Asbestos Cement Industries Ltd., has authorized capital of more than $1 million and is expected to meet the needs of Ceylon and produce exportable surpluses within two years.

Charting Business

CHEMICAL WEEK
February 11, 1956

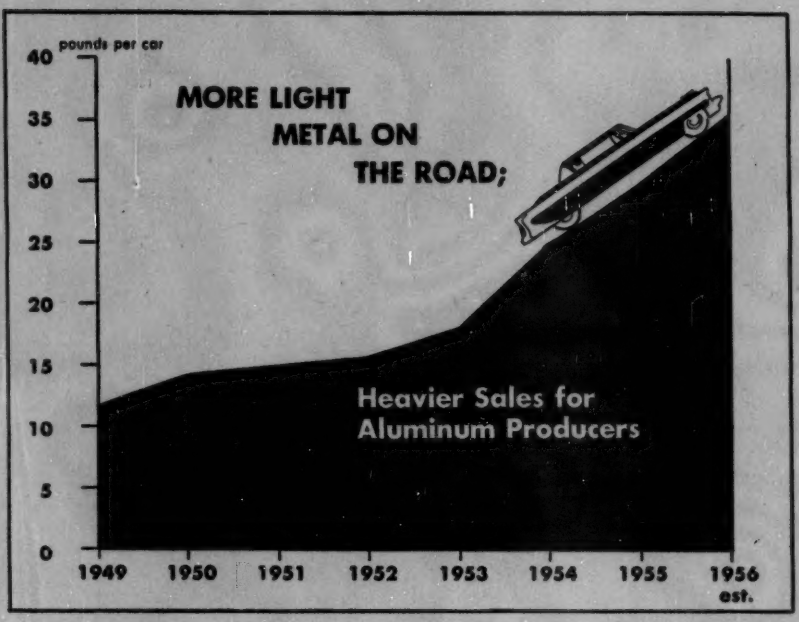


FAST gaining on the U.S., Free Europe is taking over a larger share of world sulfuric acid production each year.

Whereas the U.S. accounted for 53% of world sulfuric production in 1946, this percentage has now dropped to about 44%. Over the same period, Free Europe has increased its share from 33% to 37%. Also, Free Europe showed an average yearly growth rate of 20%; the U.S., 10%. Outrunning all others: Germany, increasing its production at least 7-fold in 10 years and still planning further expansion.

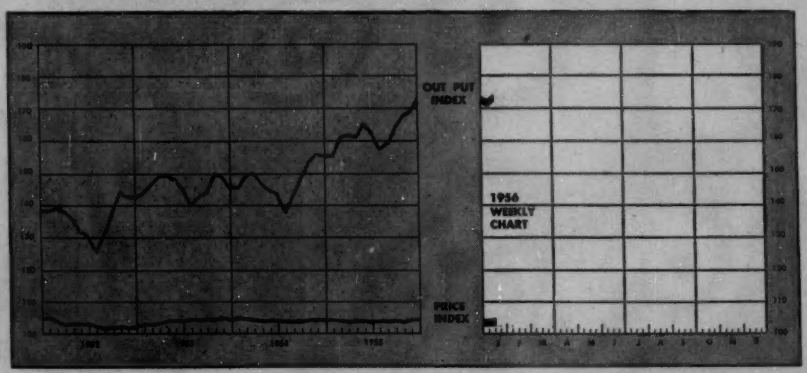
Charting Business

(Continued)



MUCH MORE aluminum per car, and many more cars on the road —that's why aluminum makers' interest in Detroit's design and production plans has perked up mightily. In six years, aluminum producers have seen their sales for this use grow by 400% (124,000 tons in '55, compared with 31,000 in '49). Main applications: automatic transmissions (50%), engines (30%), wiring, brakes, power steering, air conditioning units (20%). Upcoming development, now in pilot production: aluminum-finned, brass tube radiators.

BUSINESS INDICATORS



WEEKLY	Latest Week	Preceding Week	Year Ago
Chemical Week Output Index (1947-49=100)	180.0	177.5	161.1
Chemical Week Wholesale Price Index (1947=100)	105.5	105.1	104.4
Stock Price Index of 11 Chemical Companies (Standard & Poor's Corp.)	462.3	461.3	359.1

MONTHLY — Foreign Trade (in millions of dollars)	Exports			Imports		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	93.0	97.7	86.1	21.3	20.7	17.6
Coal-tar products	6.0	6.5	6.6	4.1	4.4	2.6
Industrial chemicals	14.0	15.5	13.1	7.0	7.3	4.6

Twinkle
twinkle...
. . little star,
How I wonder what you are . . .
A child's curiosity. How you drove Mom and Dad nearly to distraction with questions, questions, questions.
Like Mom and Dad, research scientists live in a realm of questions, questions, questions. When they find an answer, however, it satisfies more than curiosity . . . it is progress.
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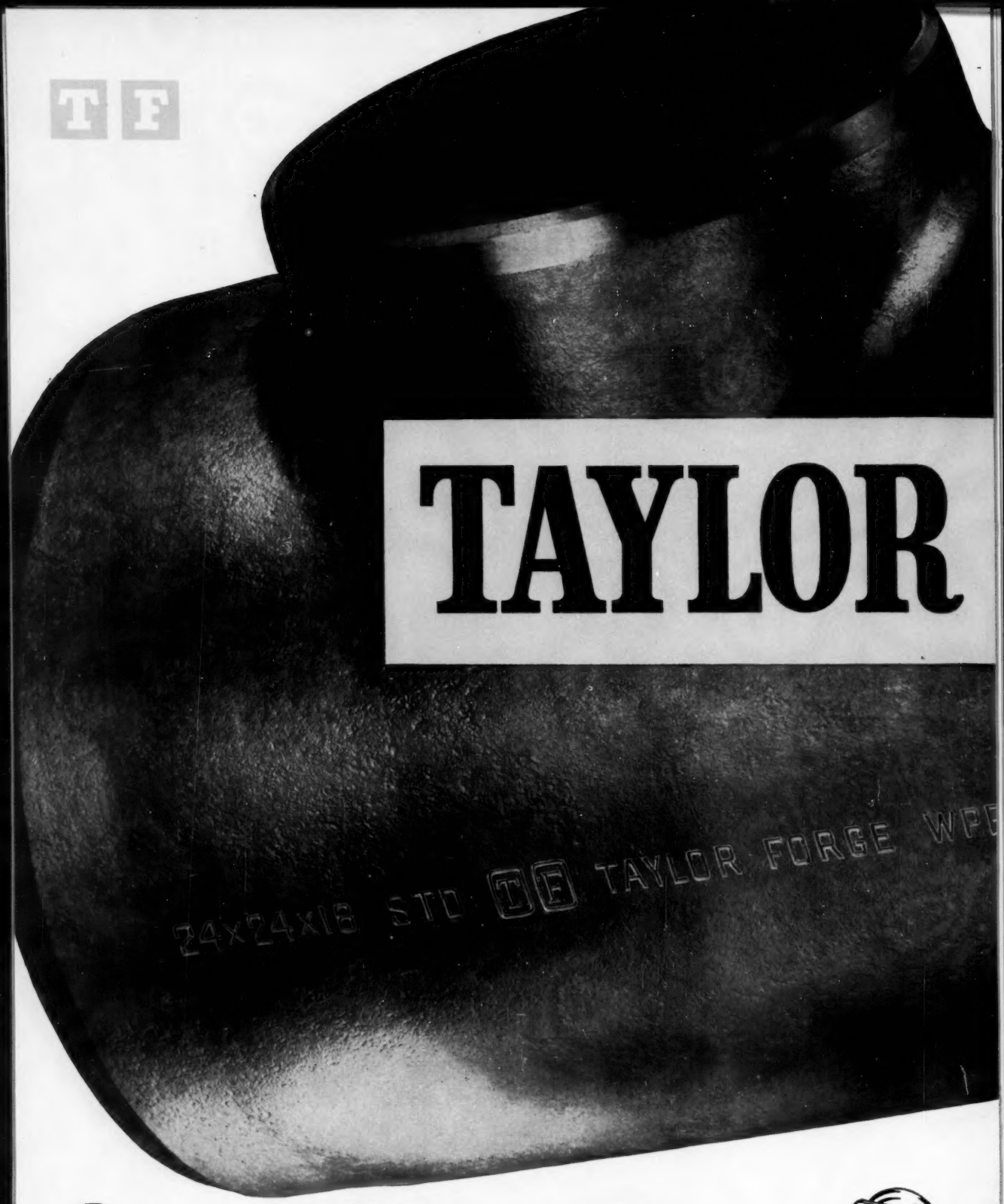
The Great Nebula in Andromeda
Painted by Chesley Bonestell
Shell Chemical Corporation
Chemical Partner of Industry and Agriculture
NEW YORK
SHELL

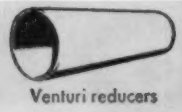


Welding nozzles

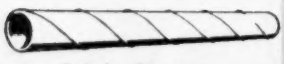
T.E.M.A. flanges and channels

Multiple outlet headers

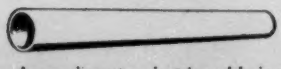
Production forgings



Venturi reducers

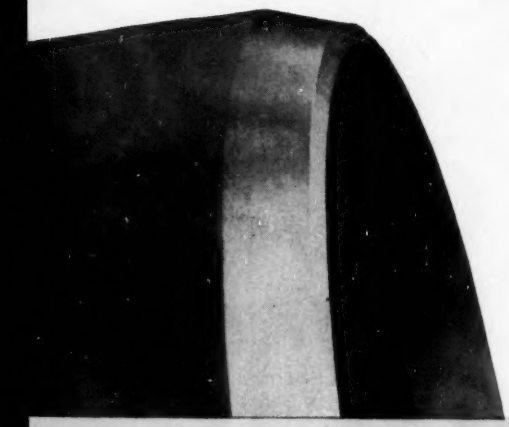


Spiral weld pipe



Large diameter electric weld pipe

Welding necks



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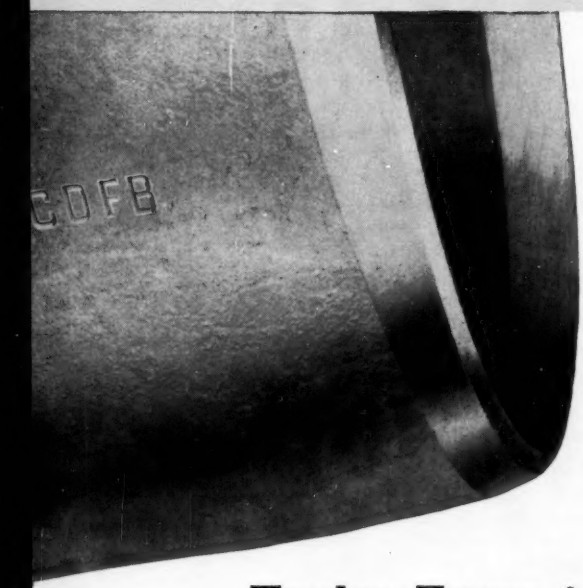

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WIDE WORLD

DCAT'S BOOTH, SCHWEMMER: In 'Operation Retort,' they conduct . . .

Industry's Own 'Gallup Poll'

Next week, in New York Board of Trade headquarters in lower Manhattan, tabulators will begin to thumb through an expected crop of 400 confidential replies from as many U.S. chemical and pharmaceutical companies in a sixth poll telling management what it wants to know.

This is "Operation Retort," a not-quite-two-years-old project of the Board of Trade's Drug, Chemical & Allied Trades Section. Its success to date—better than 50% average response in five detailed surveys—seems to stem from the fact that management is glad to take time to furnish the answers to questions that are currently on management's mind; and survey topics are suggested by DCAT members.

Managed by a committee headed by F. W. Schwemmer—a 20-year veteran of the pharmaceutical industry—the project has turned out to be one of DCAT's major activities and a leading point of interest for the organization's 800 member companies in 38 states. More than 100 suggestions for new surveys are now in the committee's hands, and more ideas are received each week by DCAT's Executive Secretary Helen Booth.

High Response: Operation Retort—the name suggests both a reply to a question and a distilling (of information)—came early in 1954 as the innovation of Sterling Drug's Stanley Clark, who was DCAT chairman that year. Clark was casting about for additional ways in which DCAT could serve its members, and when an Operation Retort committee was set up, he became its first chairman. Schwemmer—who now heads the drug operations of Ruthrauff & Ryan, advertising concern—has been a member of the committee from the outset, chairman since last fall.

Committee members were convinced that their project was on the right track when they counted up the replies that came in on the first survey. About 61% of DCAT's member companies returned the questionnaires. Most polls fall short of such proportions.

Further evidence that Operation Retort is clicking with chemical management comes from members' "fan letters." One corporate vice-president stated that the project "has been of great value to us in our planning," and another's testimonial is that Operation Retort "is helpful in determining or revising personnel policies." (So far, most of the surveys have been on employee benefits and other personnel subjects (*see below*); some members expect the project to

WHAT MANAGEMENT HAS ASKED FOR:
ALL-REQUEST PROGRAM

Surveys already completed:

1. **Holiday Closings—office and factory.**
2. **Employee Benefits—insurance, pension, bonuses, profit-sharing, etc.**
3. **Hours and Work Week—office and factory.**
4. **Vacation Policies—length of vacations, extensions, compensation, etc.**
5. **Terminations, Leaves of Absence, and Fringe Benefits.**

Survey now under way:

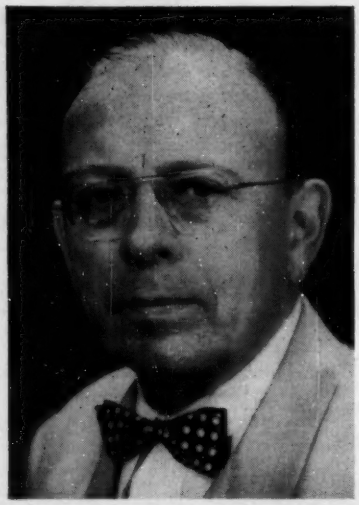
6. **Salaries of office employees.**

Suggested surveys now being considered for 1956:

Practices regarding incentive plans for executives and office employees.

Executive management development programs.

Military Reserve policies.



STERLING'S CLARK: From his innovation, a feature attraction.

be still more useful when its scope is broadened.)

If the committee can live up to its goal of five surveys a year, and if the survey subjects continue to get high rates of replies, management can count on Operation Retort to turn up quantities of specialized industry data that is not available from any other source.

LEGAL . . . . . .

What's in a Name? A Cuban federal court has confirmed the exclusive rights of Sterling Drug Co. (New York) to the Bayer trademark in Cuba, simultaneously denying its use to a Cuban agent of Farbenfabriken Bayer, AG. For Sterling—whose exclusive right to use the trademark in the U.S. is under fire from both Schenley Industries and Farbenfabriken Bayer—the decision afforded at least a toe-hold in the firm's efforts to preserve marketing advantages it enjoys in the Western Hemisphere under the Bayer name (*CW, Jan. 14, p. 13*).

•

More Force Needed: What may be first in a series of state maneuvers for stronger antitrust enforcement got under way in New York last week. The N. Y. State Bar Assn. has appointed a committee to study the state's antitrust laws, recommend methods of stronger enforcement. Says New York Atty. Gen. Javits: "The nature of complaints filed in our antitrust and monopolies bureau reinforces the need for redefining and enlarging the scope of antitrust activity on the part of New York."

•

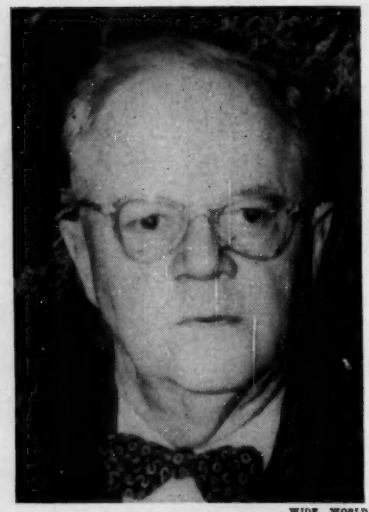
No Refiners' Relief: Oil reprocessors who've been sidestepping federal excise taxes of 6¢/gal. on reclaimed or re-refined lube oils had their position strengthened this week when a federal district judge ruled that reprocessed oil is not substantially the same as virgin oil. Barkow Petroleum Co. (Los Angeles) and Three Rivers Refinery (Three Rivers, Tex.) sought to compel the Internal Revenue Service to collect the tax from reclaimers. The court ruled that the plaintiff had not shown the two products to be substantially the same, could not require IRS to collect tax from another party.

•

Nature's Inventions: The principle that certain compounds are nonpatentable because they exist in nature has been qualified again. In overruling a U.S. Patent Office decision to deny a patent application by Winthrop Laboratories, Inc. (New York), the U.S. District Court in Washington said that the argument that a compound "exists in the human body in certain glands in combination with other compounds and, therefore, is not patentable, ignores the fact that it has no therapeutic value unless it is isolated and available in pure form."

WIDE WORLD

ATTORNEY GENERAL JAVITS: More local enforcement on the way?



WIDE WORLD

APPEALS JUDGE LINDLEY: For trust-busters, he puts a . . .

Ban on Prespanking

A company, says Judge Walter Lindley, can't be barred from all future merger negotiations on the mere suspicion that it intends to concoct a monopoly.

That was his opinion in the National Lead Co. case before the Court of Appeals at Danville, Ill. But it's rated a good bet this week that the Federal Trade Commission will ask the U.S. Supreme Court to overturn that ruling and uphold the commission's much-criticized 1953 order that —in effect—broadly interpreted the FTC act to:

- Prevent mergers by National Lead with any of its competitors.
- Require National Lead and others to stop using pricing systems that resulted in identical prices.

Lindley's decision—handed down on the company's appeal of the FTC order—affirms the latter provision, but dismisses the charge that National Lead is planning to quell competition through mergers. Opinion: "The order before us seeks to spank the child because he may somewhere, somehow in the future engage in mischief. It is elementary that a court of equity will not enjoin one from doing what he is not attempting and does not intend to do."

What happens next is up to FTC, but chemical companies wondering about merger-hunts are taking a keen interest in the outcome.

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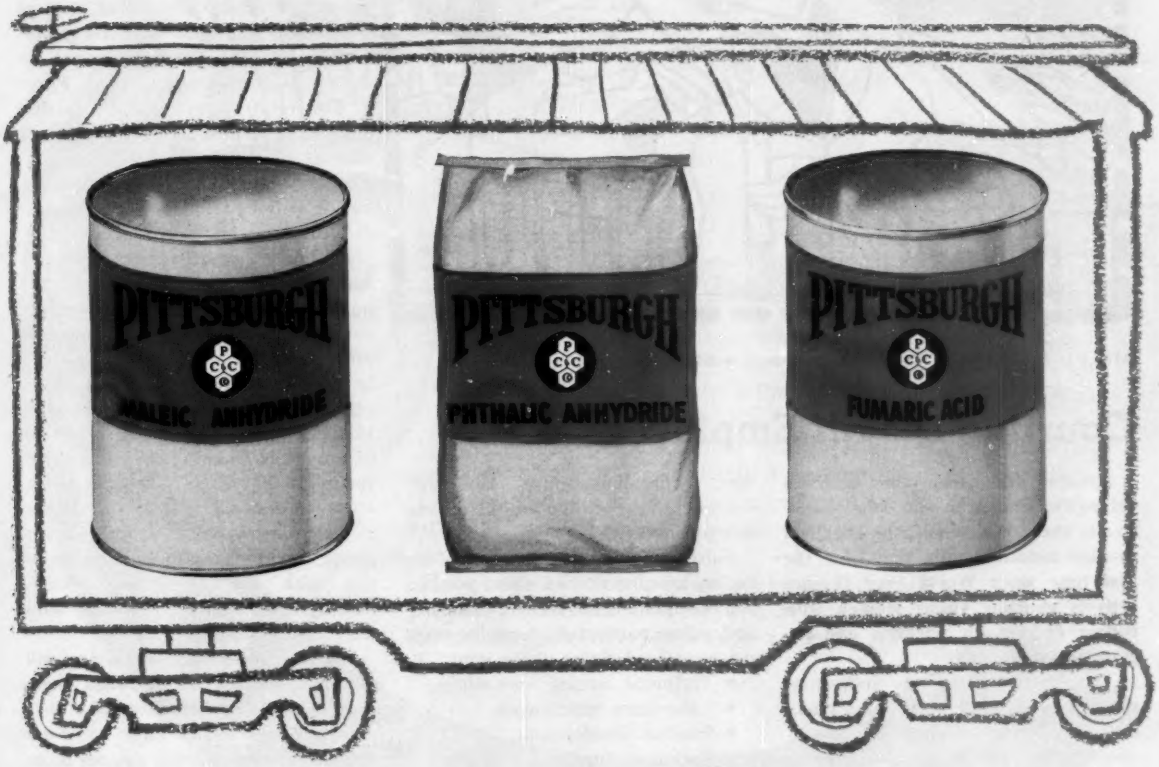

It makes *good* sense to order your phthalic, maleic and fumaric from one source—Pittsburgh Coke & Chemical. For example, a single order with Pittsburgh simplifies your paper work. And if any follow-up is necessary, it's easier to deal with one supplier than three.

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DRAWING BY GORDON DRAPER

MIXED FEELINGS: Reactions to women workers vary, but companies are . . .

Courting Distaff Employees

Ignoring the leap-year tradition calling for women to take more initiative in their own behalf, the chemical process industries this year—for the first time since World War II—are actively courting young women with college degrees for scientific and engineering jobs.

This about-face in the industries' generally conservative views on co-ed recruiting has come about because of two factors: a technical-manpower shortage that seems sure to become more pressing, and new knowledge on how to circumvent certain long-recognized drawbacks about women employees—such as short job duration, low job motivation, and everything covered by the phrase "female temperament."

New Orders: In a number of leading chemical companies, word is going out to college recruitment interviewers not to just sit and wait for women students to come and ask for interviews, but to get the names of qualified women seniors and graduate students and invite them to sign application blanks.

A bit grudgingly, supervisors and management people are finding favorable job characteristics in distaff employees. Most agree that women have outstanding qualities of patience, neatness, manipulative skill, and color perception, which eminently qualify them for such exacting jobs as microchemistry, chromatography, laboratory analysis, and repetitive projects of one sort or another.

Fairly generally now, employers are finding jobs for women where production continuity is not seriously jeopardized, where particularly feminine traits can be utilized. Some of the jobs:

- Technical writing and editing
- Laboratory bench-work
- Product development
- Technical literature research
- Patent searching

The Good Years: In terms of age, the women's bureau of the U. S. Dept. of Labor reports that 42.8% of women chemists and chemical engineers are between 25 and 34 years old, indicating a good 4 or 5 years—often twice that much—of productive potential after graduation and before quitting work. In many jobs, 4 or 5 years of productivity easily justifies the training and equipment investment for an employee.

Among others, Union Carbide and Carbon, employing about 40 women with technical degrees, is sprucing up for its campus campaign this year. For the first time, it has instructed its lady interviewers to actively recruit qualified young women.

Du Pont, American Cyanamid, and others have had sizable numbers of women on their technical staffs for several years, have actively recruited them for some time. Du Pont, for example, reports some 300 women in the company with technical degrees, further states that its total of 14,600 women boasts a high degree of job stability with 4,300 having 10 or more years of service.

Many in Pharmaceuticals: College placement directors say that a large percentage of women technical graduates go into the pharmaceutical industry. Backing this up, Chas. Pfizer & Co. (New York)—who has 300 technically trained women—points out that drug companies have traditionally hired women in what historically have been jobs associated with cleanliness, neatness and delicacy.

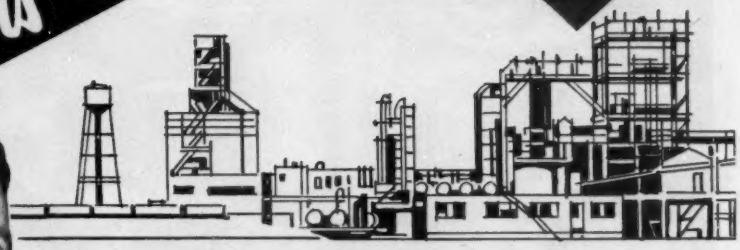
It's Pfizer's view that women are not necessarily career-minded, but it reports good experience with its women employees with regard to resignations other than for marriage or motherhood. The company says that in its experience, the company life of a woman employee, compared with that of a man, is about 1 to 4, or 5 years versus 15-20 years. When, however, a woman does aspire to make a career in the company, Pfizer policy calls for giving her responsibility commensurate with her progressing ability, treating her on an equal footing with men.

Pay-wise technical women are still discriminated against, although there has been evident improvement. Personnel officers of one large company say that women's starting salaries there are the same as for men. Colleges report that their women graduates are starting at $325-$400/month.

To women's champions, a fundamental problem is the fact that women are still educated to believe their capabilities are equal to those of men, then are told in industry that they can't expect to achieve equality. What they say is needed: more ways for women to contribute in industry, receive satisfaction and compensation, and utilize their ability and knowledge.

Strides in this direction are definitely apparent. This June, women entering the work-force and willing to locate away from home will find brighter prospects than ever before, will find many more technical openings in chemical firms. As one company sums up, "We haven't hired many women, because we haven't seriously felt the shortage. But if it keeps up, we'll be out there campaigning with the rest of them."

Memo to: Successful Engineers



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TOMORROW'S BIG DECISIONS WILL BE MADE **by the men who act today...**

CHEMICAL TARIFF HEARING: In plea for aid on PAS, Sumner Chemical asserts that new escape clause means . . .

Unanimity Not Required

Exactly what a new tariff law means to chemical companies is being threshed out this week by the U.S. Tariff Commission in the Sumner Chemical Co. case, following contested hearings in Washington last fortnight.

Bone of contention: What portion of a U.S. industry has to prove it's being injured by foreign competition before duties will be hiked to protect the domestic producers?

The case poses a test of a tariff law amendment passed by Congress last year. It permits use of the escape clause to get an exemption from reciprocal trade concessions if a segment of an industry—not necessarily a whole industry—can show injury from competing foreign imports.

Sumner—one of the two remaining U.S. producers of para-aminosalicylic acid (PAS) and its salts, which are used in tuberculosis treatment—is leading a fight to get tariff rates on competing foreign bulk imports of the drug boosted back to pre-1951 levels.

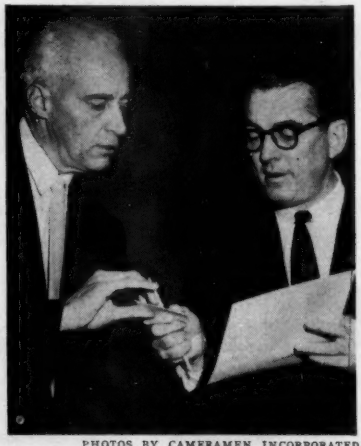
Two Survivors: Complaining that the tariff had been cut from $2.70 in 1950 to $0.70/lb. now, Sumner attorney J. Bradley Colburn asserts that European PAS has been winning a price war that threatens to put U.S. producers out of business entirely. In support of this contention, he told the commission at the hearings that only two of the 10 original American producers have so far withstood the pressure of rising foreign imports of the drug. And these, too, he predicted, will be forced out of business soon if tariff relief is not forthcoming.

Sumner's Executive Vice-President Ralph Ericsson stated that PAS imports were never a substantial threat in this country until the Torquay convention of 1951 in England reduced U.S. duties on it by 50%. He argued that complete dependence of this country on foreign supply of PAS would be a blow to national health.

ATTORNEY COLBURN: For U.S. producers, a new bid for relief.

Opposed by Importers: Opposition to the tariff hike was led at the hearings by John Irwin Dugan, attorney for four New York importing firms—Roussel Corp., American Roland Corp., Rhodia, Inc., and Chemo Puro Manufacturing Corp.

Dugan asserted that—though foreign imports rose after 1951—most of the competition and resulting price reductions stemmed from U.S. producers themselves. The firms that gave up did so, he contended, because they could not make a profit against U.S. competition. Those that stayed in business, he declared, have a market guaranteed them by virtue of the "Buy-American" laws that require federal



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ZIMMERMAN, DUGAN: For importers, an efficiency reward?

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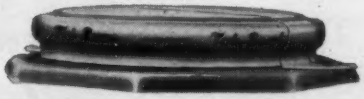

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Van Leer Industries, Ltd., Seymour House, 17 Waterloo Place, Pall Mall S.W. 1. London, England

institutions to purchase U.S. products or place a penalty percentage price hike on the foreign products. Many state and local institutions have adopted similar restrictions on foreign imports. And, says Dugan, these rules are a big factor in the PAS market because about 80% of all TB patients are treated in state and local institutions.

Inefficiency Charged: Dugan told the commission that lower wage levels aren't the only reason European producers can beat U.S. prices. U.S. production costs, he related, are higher because of an "inefficiency" within the PAS industry here. U.S. producers, he explained, don't make their own meta-aminophenol, from which PAS is manufactured. European producers do, thus have lower production costs.

'Segment' at Issue: The question raised by foreign PAS importers: whether Sumner's activities constitute a "segment" of an "industry." Tariff commissioners themselves have criticized the terms "injury" and "industry" as loose and have asked staffers to draw up better definitions.

The test of the "segment" clause has special significance for chemical concerns, often beset by foreign imports. Synthetic hormones are a case in point; another: acid-grade fluorspar*.

The complex nature of chemical trade and tariff problems is highlighted by the fact that in any given case, U.S. concerns are likely to line up on opposite sides.

In the PAS hearing, Sumner was the only U.S. bulk producer to petition for the escape clause. Parke, Davis & Co.—which markets PAS in dosage form—backed Sumner's contention that foreign imports have an adverse effect on prices, but refused to join in requesting relief. P-D's lawyer admitted under questioning that one thing that influenced the company not to ask relief on PAS was the fact that it had a considerable export market for its general line of pharmaceutical products.

Sure Supply Wanted: Sumner's most wholehearted support came from Dr. Floyd Feldman of the National Tuberculosis Assn., who testified that NTA wants to be sure of a steady supply in case an emergency shuts off foreign sources. Other backing came from Panray Corp.—whose spokesman testified that if imports continue to undercut U.S. prices, Panray would have to give up this item—and from Monsanto and other former U.S. producers, who filed briefs with the commission.

Arrayed against Sumner were two firms—both suppliers of imported material—which testified with the importers against any tariff hike. They were Chemo Puro Mfg. Co., bulk supplier, and American Quinine Co., dosage-form supplier.

Former U.S. producers of PAS did not appear at the hearing, but they cooperated by furnishing—as confidential material—detailed data on their PAS production costs.

The fact that other U.S. chemical concerns didn't turn out and fight for a ruling that would set a favorable precedent for this industry looks like an indication that chemical management generally accepts the views of its industry associations: chemical tariff setting should always be handled on an item-by-item basis.

* In an investigation last month pertaining to fluorspar, the six members of the Tariff Commission divided three to three in their vote on whether their finding should be that the domestic industry is being injured by imports.

More Rank-and-File Owners

In the past six months two big chemical companies—Du Pont and International Minerals—adopted employee stock purchase plans. And so far, both firms are well satisfied with the way the plans have gone over.

Previously, the companies had special incentive plans for officers and key employees; but late last year, these two concerns came up with programs that are turning rank-and-file workers into stockholders and thus co-owners of the respective companies.

Up to then, the only large chemical firm actively converting its workers into owners was Dow, whose employee stock purchase program started in 1948. In numerous other chemical and pharmaceutical companies, officers and "star performers" can acquire their corporation's common stock, but so far there has been great uncertainty about the wisdom of extending those privileges to all employees.

Display of Confidence: The fact that a management offers such a program indicates confidence that the employees will "go for" the idea; and the fact that employees do sign up in mass for the stock benefits is another big display of confidence in the company.

And that's just the way these plans are working out at all three of these big chemical concerns. The statistics:

- Dow's latest offering—124,887 shares in 1955—was snapped up by 10,715 employees, or 41% of the company's total work force.
- Just a few weeks after the Du Pont program started last September, participation was up to about 74% of all employees.
- During November, while the rolls were open for the IMCC plan, 1,253 employees—about 30% of those eligi-

PERSON TO PERSON: IMCC foreman explains stock plan.

THESE SILOS FEED INDUSTRIAL NEEDS

Fodder for virtually every industry—in huge amounts for many, down to laboratory quantities for others—is contained in these storage bins, known to the trade as silos. Unlike their counterparts in agriculture, which store against the winter season, the turnover of their contents is relatively constant. For these silos hold Soda Ash—historically the oldest of all major industrial chemicals in use today.

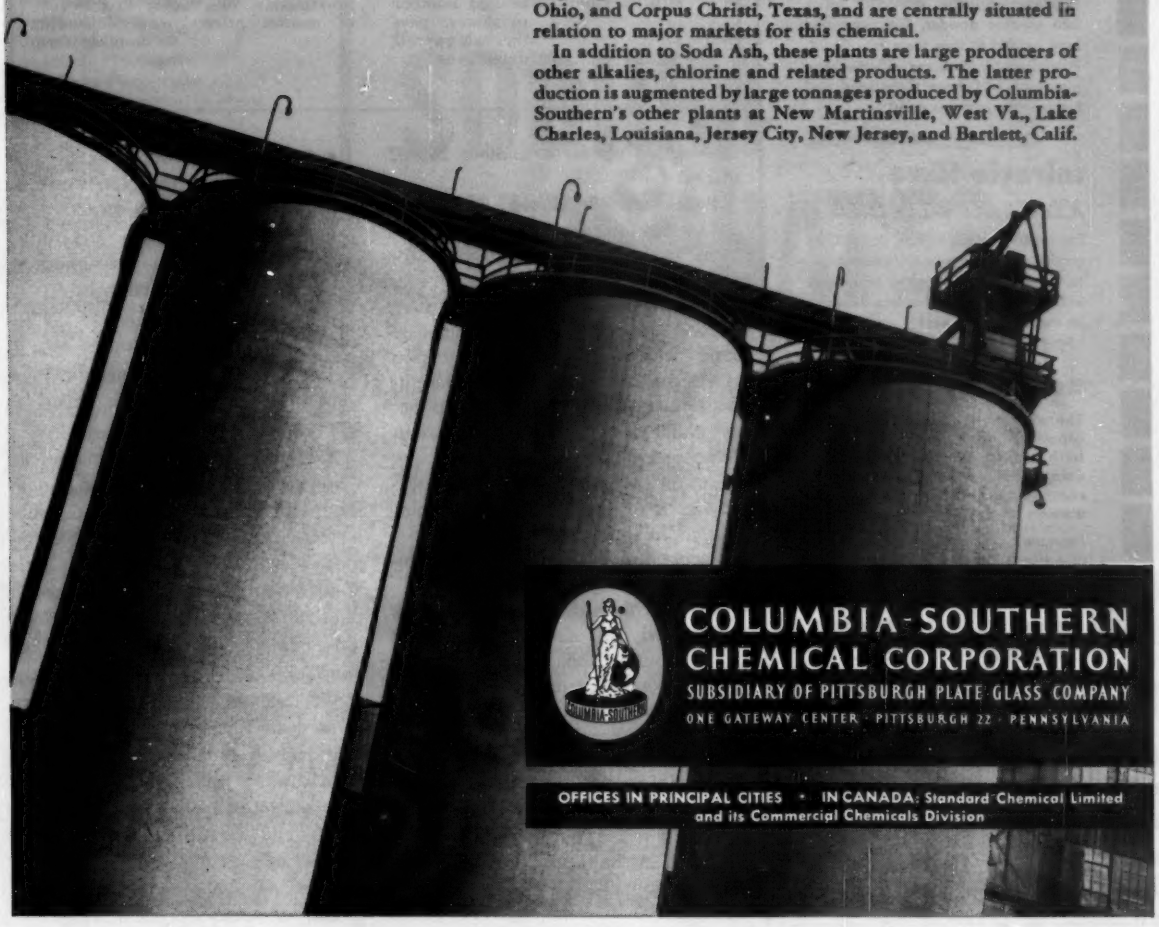
So varied and essential are the uses of Soda Ash that its consumption is a very accurate index of national commercial prosperity. Soda Ash is a basic ingredient of glass, which represents the largest single use, being surpassed only by the aggregate requirements for the production of other chemicals. Other major industrial uses include soap, cleansers and detergents, pulp and paper, textiles, metal refining, water treatment and petroleum refining.

Columbia-Southern's production of Soda Ash dates from its first operations in 1899. Through constant expansion, it has maintained its position as one of the nation's leading producers of Soda Ash and other alkalies —and a reliable source of supply for all industry.

COLUMBIA-SOUTHERN PRODUCES SODA ASH IN LARGE VOLUME AT TWO LOCATIONS

Two of Columbia-Southern's six plants are among the nation's largest producers of Soda Ash. They are located at Barberton, Ohio, and Corpus Christi, Texas, and are centrally situated in relation to major markets for this chemical.

In addition to Soda Ash, these plants are large producers of other alkalies, chlorine and related products. The latter production is augmented by large tonnages produced by Columbia-Southern's other plants at New Martinsville, West Va., Lake Charles, Louisiana, Jersey City, New Jersey, and Bartlett, Calif.



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*Du Pont's trade-mark for its polyester fibre

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EMPLOYEE STOCK PLANS: 1 OLD, 2 NEW

(Comparison of 1955 Du Pont and IMCC stock purchase plans with Dow program started in 1948)

Company	How employee participates	How company contributes	How individual subscriptions or stock quotas are determined
Dow Chemical	Takes option on limited number of shares; pays through payroll deductions	Sets price at 85% or less of market price	Up to 10% of year's salary or wages
E. I. du Pont	Buys U. S. Savings Bonds through payroll deduction	Puts up all money for purchase of stock	Up to $37.50/month to buy U.S. bonds; company contributions pegged at ¼ of employee's deductions for bonds
International Min. & Chem.	Takes option on limited number of shares; pays through payroll deductions	Price set at approximately 90% of market price	20 to 50 shares over first two years, depending on monthly earnings

ble—signed up for a total of 28,402 shares.

Paperwork Problems: Advantages and disadvantages of employee stock plans probably will be debated for decades to come; and some companies likely will choose to stick to other methods of compensation designed to build more loyalty and company spirit in employees. Union Carbide has its employee savings plan, Eastman has its annual wage dividends, and various companies have bonus schemes.

But the two newcomers to the stock-buying operation are demonstrating that at least one of its drawbacks—the accounting problem—can be minimized.

Du Pont finds that more paperwork is required, but simply passes most of this burden on to its new electronic accounting equipment. With this system, the company reports that "no unusual bookkeeping problems are encountered."

By the Manual: Before IMCC put its plan in motion, the company spent months working out a simplified installation method. Among the procedures adopted to cut down on paperwork:

- Subscriptions were taken only during November; the plan won't be reopened until next December.
- There'll be no "in's and out's" in this plan; if an employee withdraws, he's not eligible to re-enter.
- One fixed date—Dec. 1, '57—was set for issuing the stock.

There also were advance preparations for explaining the plan to employees.

Evidence is that participation in these plans is heaviest among high-salaried employees. At IMCC, subscribers include 23.4% of eligible employees whose pay averages less than $500/month; 65.9% of employees in the $500-$750 bracket; and 85.6% of those employees receiving $750 or more.

Whether this is the ideal pattern is hard to say; probably the better-paid employees have more company spirit anyway. But those are the people who are most valuable to the employer, and the stock ownership plan may be one good way to hold on to those people and keep them interested in their company's profit making.

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Trimethyl phosphite†
Triethyl phosphite†
Triisopropyl phosphite†
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‡U. S. PAT. 2,722,479

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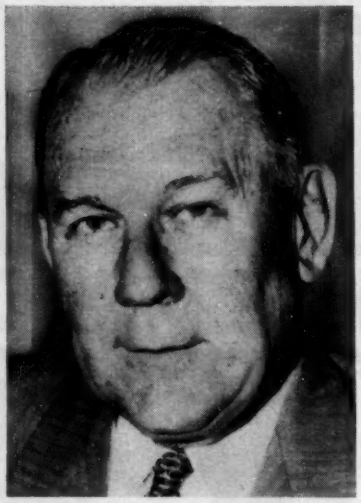

WIDE WORLD

REP. BARDEN: To Labor Secretary Mitchell, a rebuke and a refusal.

LABOR . . . . . .

No Hasty Lawmaking: Despite prodding by Secretary of Labor James Mitchell, the House Labor Committee refuses to be stampeded into advancing the Administration's proposals on labor laws. To Mitchell's recent complaint that the group has been "bottling up" certain Eisenhower-backed bills, Committee Chairman Graham Barden (D., N.C.) retorted that Mitchell should "spend more time administering the laws he already has instead of trying to run Congress." Resulting outlook: very little action on labor legislation in '56.

•

Agreements, Disagreements: Labor relations peace was spotty in the chemical industry this week.

At Deepwater, N.J., clerical employees at Du Pont's big Chambers Works voted 407-60 to accept a two-year contract that places those workers on salary, rather than hourly wage, payrolls. And at Brandenburg, Ky., most of the production and maintenance workers in the Olin Mathieson plant have approved a contract providing for 7% wage increases that will range from 12 to 17¢/hour.

But there's friction at other sites. Members of the Oil, Chemical & Atomic Workers (AFL-CIO) struck the Lehn & Fink cosmetics and pharmaceutical plant at Bloomfield, N.J., demanding a 20¢ pay rise. Lehn & Fink—which in 85 years never had a strike—has offered 7¢/hour.

KEY CHANGES . . .

George O. Morrison, to president, Gelvatex Coatings Corp. (Anaheim, Calif.).

Edmund R. Beckwith, Jr., to vice-president, marketing and administration, Warner-Chilcott Laboratories (Morris Plains, N.J.).

Thomas J. LaBounty, to vice-president, Bee Chemical Co. (Chicago).

James E. Rundell, to board of directors, Hoffman-Taff, Inc. (Springfield, Mass).

Frank J. Koegler, to board of directors, National Lead Co. (New York).

Robert F. Gager, to vice-president, research, Synco Resins, Inc. (Bethel, Conn.).

Robert E. Yancey, to vice-president, Ashland Oil & Refining Co. (Louisville).

Berrien Eaton, to board chairman, **W. Thompson,** to president, and **Raymond F. McDonald,** to executive vice-president, Eaton Chemical & Dyestuff Co. (Detroit).

Orville L. Fisher, to vice-president, Continental Oil Co. (Houston).

Gordon H. Chambers, to board chairman, and **L. G. Bliss,** to president, Foote Mineral Co. (Philadelphia).

Henry D. Noll, to director, foreign operations, Houdry Process Corp. (Philadelphia).

Harris S. Woodman, to division chairman, Wadsworth & Woodman Division, Interchemical Corp. (Winthrop, Me.).

A. J. Broggini, to executive vice-president, Badger Manufacturing Co. (Cambridge, Mass.).

DIED . . . . . .

J. R. T. Bishop, 59, vice-president, Ac'cent International Division, International Minerals & Chemical Corp. at San Jose, Calif.

Joseph D. Davis, 73, former head, Coal Carbonization Section, Bureau of Mines, at Pittsburgh, Pa.

Albert Walter, former chairman of the board, Stauffer Chemical Co., at Miami, Fla.

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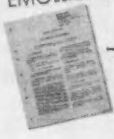

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DRAWING BY GORDON DRAPER

WINNOWING THE WINNERS: Unused patents may still have earning power.

Prospecting in Patent Files

Reviewing old, unused patents may sound like dull work. But to chemical process companies, the project holds intriguing profit possibilities. American Viscose, for example, recently reappraised over 1,000 dormant patents, found: more than a score of licensible items; two new products (fibrous rubber and spray-formed plastic fibers).

Avisco's study, carried out with the aid of Arthur D. Little, Inc., underscores the fact that patents—even on the shelf—represent an investment. As such they deserve careful, periodic evaluation for possible further research and development, licensing or sale.

Because of its experience with Avisco, ADL has set up a new patent development service. It operates like this: initial screening of large numbers of patents is done by researchers who are specialists in the subject matter; selected patents are discussed by ADL's patent development people with members of its technical staff and a representative of the ADL market-survey division. The last-named field checks the potential of culled patents.

ADL's project is attracting interest, because it's one way highly specialized companies may sound out the possibilities their patents hold in a wide range of industries. Rayon and cellophane maker American Viscose now licenses patents on abrasive wheels and fire alarms.

All dusty patents do not, of course, hold profits*—especially since their inactivity may stem from a number of obvious reasons (*see box, p. 48*). Too, Avisco's experience represents only one full treatment of the service, although four other companies (including a chemical firm) have now entered into a similar arrangement with ADL.

Patent assets vary widely in the industry, as do methods and needs for patent reviewing. Lubrizol (Cleveland), B. F. Goodrich, and Harshaw each reviews its own patents, considers its home-grown procedures adequate. In these firms, the feeling prevails that since patent information is public knowledge, interested companies are likely to investigate for patents suited to their needs, then approach the patent holder concerning possible sale or licensing.

Victor Chemical also does its own reviewing, but agrees that the consultant approach has merits. Victor has sold patents outright in the past—almost always on product derivatives (where Victor could remain the raw material supplier).

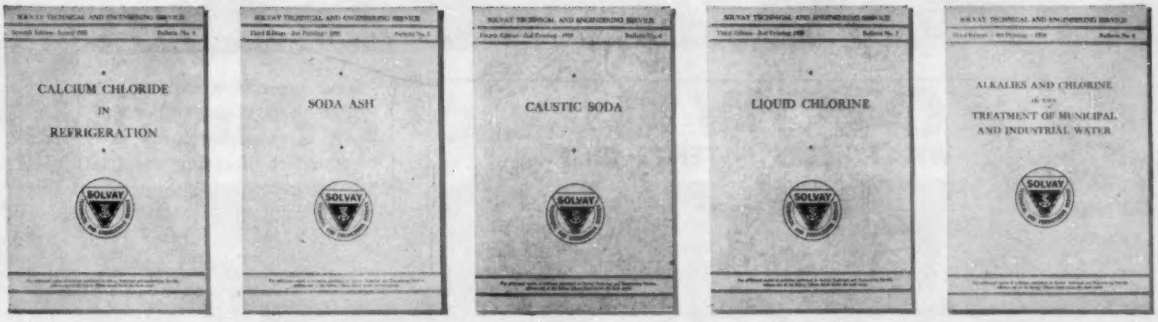
International Mineral and Chemical as yet hasn't any inactive-patent problem. Reason: its patent department is only nine years old (only about three times as long as it takes to get a patent), and almost all of its patents are useful. Others, too—Stauffer, for example—have no appreciable backlog of unused patents.

Another viewpoint is held by Abbott Laboratories, which also has its own facilities for reviewing patents—almost all of which are in the narrow and highly active drug field. Nondrug patents, avers Abbott, involve such high research expense that the selling price would be too high to be attractive to prospective buyers. Therefore, Abbott views outside help on patent screening as not justified.

Because of the variegated nature of their patents, oil companies are likely to benefit from consultation that crosses industry lines. Examples: Standard Oil (Indiana), which has its own reviewing group, and Humble, which doesn't, approve of the relatively new idea of outside help in patent screening.

On the other hand, another large oil firm believes that a consulting firm

*Avisco, e.g., found its waste cellophane could be mixed with fertilizer as soil compost, but abandoned the idea when the price of the waste rose to a prohibitive 9¢/lb.



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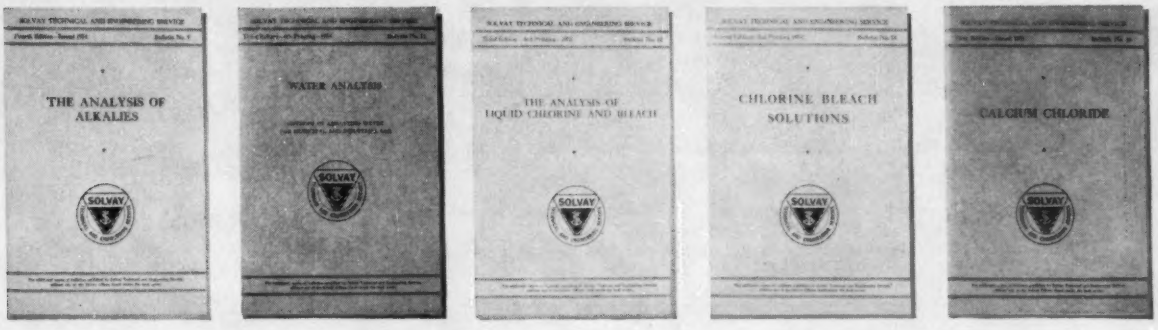

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WHAT KEEPS PATENTS IDLE

1. Lack of sufficient time, facilities, or personnel to exploit them.
2. Failure by management to understand their scope.
3. Newer technology makes them worthless.
4. They relate to a product abandoned by the owner (but may still have licensing value).
5. They no longer relate to the owner's activities.
6. Expense of putting them to use (e.g., scrapping or installation of equipment) isn't justified.
7. Legal problems—infringement, invalidity, estoppel (lost rights) bar their use.
8. Ideas, not reduced to practice when patented, may prove inoperative when tested.
9. Lack of management confidence in the inventor and/or his patents.
10. Partial exploitation—they may have additional value for other uses.

cannot do as good a reviewing job as a sizable industrial organization can do for itself. The company feels that familiarity with needs of a large number of industries isn't as important as a strong grasp of the patent subject.

Acquainting an outsider with all phases of research, it believes, is likely to require too much time, involve direct and indirect costs far beyond value received, and be generally inefficient. However, if a company can't do its own reviewing, a consultant's help every three or four years is deemed essential.

One chemical firm holds an annual general review of its patent situation. But the review is primarily a recapitulation of patents issued in the past year, general patent activity in the industry, and a comparison of competitive patents rather than evaluation of unused patents. Basic in its industry, it restricts its patent applications to those projects it expects to use itself or to those closely related to its field.

As a company policy, it is not interested in licensing the fruits of its research except for trading when necessary to protect its basic role in the industry. Conclusion: where there are few basic producers and competition is close and easily watched, self-review should be sufficient and is more discreet.

Avisco itself admits its return on patent development is just beginning to pay for the program. But, like other prospectors, it's convinced the effort will be reflected in future earnings.

ADL PATENT SCREENERS: After discussion, a field check.

Warfarin in a New Role

Heart disease sufferers have a special stake in anticoagulant investigations recently reported by U.S. Army physician Col. Byron Pollock. Using warfarin*, Pollock treated 100 patients with ailments requiring anticoagulant therapy—e.g., acute thrombophlebitis, myocardial infarction, pulmonary embolism—concluded it is "more nearly an ideal anticoagulant than other agents now available."

His reasons: the drug works quickly, can be administered either orally or intravenously, and apparently lacks side reactions.

The compound, 3-(α-phenyl-β-acetylethyl) - 4 - hydroxycoumarin, exerts its therapeutic effect in about 21 hours when administered intravenously, 24 hours when given orally. Although excessive doses can produce hemorrhage, menadione and phytonadione (vitamin K_1) will counteract this condition.

While a variety of other anticoagulants have proved clinically useful, each has its drawbacks. Heparin, for one, can't be administered orally, is expensive, and requires frequent administration. Others: phenindione (possible side reactions); bis-hydroxycoumarin (takes time to take effect); cyclocumarol (may be cumulative); and ethyl bis-coumacetate (loses its therapeutic effect quickly).

The search for the perfect anticoagulant isn't necessarily over. Even warfarin works better, in some cases, with heparin. But warfarin—a rodenticide originally, looks like one of the best anticoagulant drug prospects.

*Made by Endo Products, Inc. (Richmond Hill, N.Y.), only present licensee by Wisconsin Alumni Research Foundation for the medicinal warfarin. U.S. Pat. 2,427,578 (others applied for) covers the compound.

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Write for the Victafile listed on the back page that tells how Victor chemicals are used in *your* industry. *It Pays* to see Victor.

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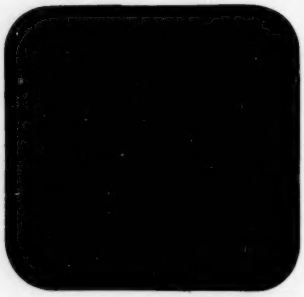

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1939	23			
Basic		$9,616	$5,039	$880
Applied		405	45	0
1946	30			
Basic		$8,415	$4,553	$1,516
Applied		2,807	1,464	948
1953	43			
Basic		$16,755	$7,995	$1,878
Applied		9,151	4,480	544

Smallest Gainer—Research

The nation's biggest philanthropic foundations support relatively little scientific research. And of the money spent on scientific research projects, considerably more is spent on basic research than on applied.*

These are the key findings of a report prepared by New York's Russell Sage Foundation and newly published by the National Science Foundation (*CW Technology Newsletter, Feb. 4*). The survey covers expenditures of 77 large foundations, ranging from the Ford Foundation with assets of $520 million—the largest—to the General Education Board (whose assets of $884,000 make it 77th in asset size on the NSF list).

Also listed are such well-known foundations as Carnegie Institution, Duke Endowment, Field Foundation, Guggenheim Memorial Foundation, Kresge Foundation, Mayo Association, Rockefeller Foundation, the Twentieth Century Fund—and others less well-known.

Expenditures of the 77 totaled $164 million in 1953 (the year surveyed), less than 4% of the total spent for philanthropy in the U.S. that year. Of this, $26 million—or 19.8%—went for scientific research. This amount, NSF says, is "less than 1% of the estimated national total for all research and development."

Of the 77 scientific foundations, 43 reported expenditures for scientific research.

An estimated 4,500 smaller foundations were not covered in the study. But a random sample of 50 (having total assets of $7.6 million) showed total expenditures of $1.2 million. NSF reported that not more than 6 supported any scientific research at all.

*The report warns as to the accuracy of the differentiation between applied and basic research—definitions vary among reporting institutions; sometimes funds granted for basic research are actually used for applied research projects.

Nuclear Forecast

Last week's McKinney panel report (CW, Feb. 4, p. 13) on peacetime atomic energy contains separate reports on radiation catalysis and thermonuclear (nuclear fusion) technology, helps appraise the commercial prospects of both.

Brookhaven National Laboratory's Bernard Manowitz and David Ballantine sketched radiation's limitations and attributes in inducing chemical reactions.

Manowitz sees a possibility that radiation can edge out conventional catalysts in continuous processes, where it can be used to advantage in precluding the need for costly pressure equipment (e.g., in large-scale produc-

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ash	●	.05% max.
solubility	●	1 gm. completely soluble 9 gm. dist.H_2O

Typical reactions of CYANOACETAMIDE

REDUCTION

$CNCH_2CONH_2 + 2H_2 \xrightarrow{\text{catalyst}} NH_2CH_2CH_2CONH_2$
amide of β-alanine

DEHYDRATION

$CNCH_2CONH_2 \xrightarrow{\text{catalyst}} CNCH_2CN + H_2O$
malononitrile

CONDENSATIONS

$2CNCH_2CONH_2 + RR'C=O \xrightarrow{\text{catalyst}} RR'CCH(CN)CONHC(=NH)CHCONH_2 + H_2O$
ketone or aldehyde → substituted piperidine

$CNCH_2CONH_2 + RCOCR'HCOR'' \xrightarrow{\text{catalyst}} RC=C(CN)CONHCR''=CR' + 2H_2O$
diketone → substituted pyridone

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tion of polymers). But he sees little chance of radiation replacing relatively cheap catalysts, except in special cases.

Ballantine points out that radiation can initiate reactions at low temperatures and pressures, eliminates the possibility of catalyst impurities entering into the reaction. It also brings about reactions in the solid state (e.g., polymerization of acrylamide and other crystalline monomers). His estimate: radiation's best bets lie in free radical reactions; high-yield chain reactions; and reactions that can be catalyzed by ultraviolet light.

Among the high spots in the Atomic Energy Commission's Sherwood Branch report on fusion progress (*CW Technology Newsletter, Feb. 4*):

- Ultimate goal of its project is controlled release and recovery of energy from deuterium nuclei.
- Each of Sherwood's three major installations (at Los Alamos, Princeton University, and Livermore) is following a different approach to this end.
- When and if fusion power becomes practical, fission power or heat plants will be a logical market for the outpouring of neutrons produced as a fusion by-product.
- Thermonuclear machines will be safer than fission reactors. Reason: a comparatively minute amount of fuel is required, reserve fuel can't take part in fusion until put into the machine.

•

New Rule: Effective Feb. 25, a new Atomic Energy Commission regulation provides that: (1) AEC may issue royalty-free licenses on government-owned patents, (2) it may issue non-exclusive licenses on privately owned patents determined to be "affected with the public interest" or useful to another licensee, (3) reasonable royalties be awarded to any patent owner whose device is licensed through AEC determination, and (4) any such patent owner is entitled to a public hearing to contest such licensing of his device.

•

Consolidation: Merck research activities will be consolidated in a new division to be called Merck, Sharp & Dohme Research Laboratories. Max Tishler will head the new division from March 1, with the title of vice-

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RESEARCH . . . . . .

president and executive director. Tishler is currently vice-president for scientific activities of Merck's Chemical Division.

•

Expansion: Hooker Electrochemical Co. (Niagara Falls) is reportedly considering purchase of property on Grand Island in the Niagara River for a new multimillion-dollar research center. Hooker discloses it has several options on the necessary land, has still to settle zoning matters. Grand Island has no industrial zoning at present.

•

Atomic Entry: Latest to join Armour Research Foundation's (Chicago) atomic reactor program is Eli Lilly & Co. (Indianapolis). The company has contributed $20,000 to become a participating member, is now making studies to determine how best to use the reactor in its pharmaceutical and biological research. About 25 companies, contributing a total of $500,000, will support ARF's reactor plan.

•

Directory: The 1956 edition of the Directory of the American Council of Independent Laboratories, Inc., includes service and facility details for 67 member laboratories. It's obtainable without charge from ACIL, 4302 East-West Highway, Washington 14, D.C.

•

Worm Treatment: According to R. F. Shumard and D. F. Eveleth of the North Dakota Experimental Station (Fargo), piperazine citrate is both a preventative and a treatment for worm parasites in dogs, poultry and hogs. Features: high solubility (it can be added to drinking water), low toxicity.

CW Report

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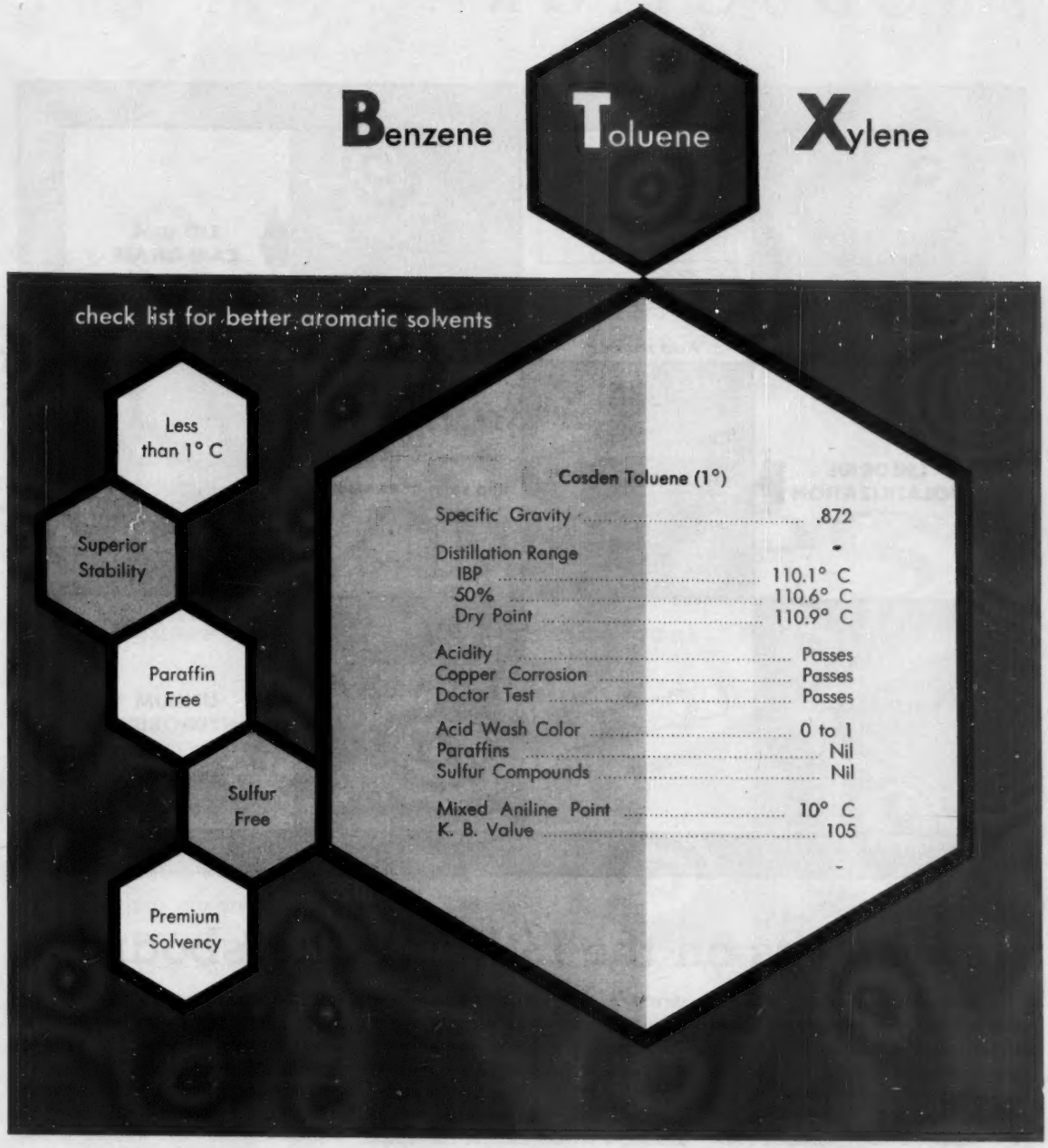

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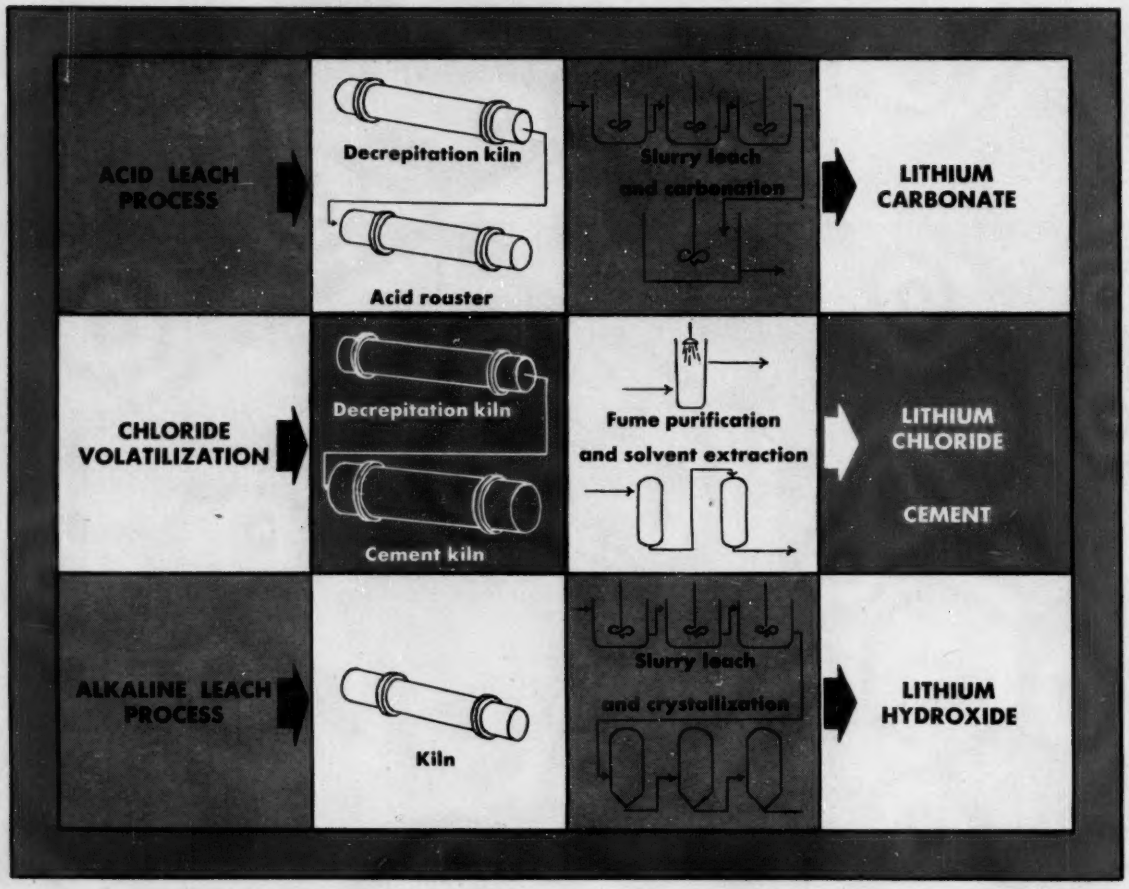

New Moves on the Lithium Chessboard

In their efforts to capture a larger share of the ever-increasing lithium market, most producers are plotting expansion moves* along conventional time-tested systems. Even the newest entrant—American Lithium Chemicals—follows a fairly standard route after an unusual opening that starts with lepidolite instead of spodumene ore. But now Scientific Design is anxious to get into the game, offers a completely new gambit based on a chloride volatilization process.

Aimed at more economical recovery of lithium from plentiful domestic pegmatite ores, SD's route is a radical departure from conventional roast-and-leach processes. By recovering lithium directly as the chloride (the compound required for electrolytic production of the metal), it bypasses several costly processing steps required for the conversion of the common lithium carbonate and hydroxide products. And by utilizing a cement kiln for the critical volatilization step, it turns out a very salable by-product to bear a sizable share of production costs.

SD's process starts with pegmatite ore, which contains 12-30% spodumene. Lithium content is first increased from 1.8-2% to 4.5-7% by heavy media separation, which eliminates most of the feldspar, quartz and mica from the ore. Then, since alpha-spodumene is too hard and dense for easy crushing, it's converted into more friable beta form by heating to 1100C in a decrepitation kiln.

After cooling and crushing, the finely ground ore passes into a mixer where 64 parts of sand, 590 parts of ground limestone, and 29.5 parts of calcium chloride (as 40% aqueous solution) are added to 100 parts of beta-spodumene. The mixture is fed through a rotary cement kiln at 1100-1200 C to volatilize the lithium component, to produce high-grade cement clinker.

As the key step in the process, the cement kiln reaction is a critical operation. Higher than recommended temperatures must be avoided or the feed mixture may fuse and become less reactive. Too low a temperature, on the other hand, results in incomplete reaction and volatilization of the desirable lithium values.

Fume Recovery: The gaseous mix-

* Foote Mineral expanded lithium facilities at its Sunbright, Va., plant late last year; Lithium Corp. of America recently put a new $7-million plant onstream at Bessemer City, N. C.

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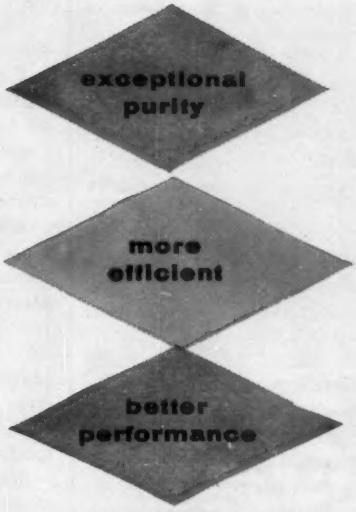

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ture passing off from the discharge end of the kiln contains 19 parts of lithium chloride, 1.3 parts of sodium chloride, and 1.0 part of potassium chloride. As the gas passes through a waste heat boiler or other heat recovery system, most of the alkali metal chlorides come down with the dust that settles out of the gas stream.

The solids are made into a slurry by the addition of water or mother liquor from a subsequent recovery step, filtered or centrifuged to recover the dissolved salts. Solid residues are recycled to the kiln to prevent material loss.

Crude lithium chloride solution is concentrated by evaporation to 40-44% LiCl. Sodium and potassium chlorides are removed from the resulting slurry by precipitation and filtration at 25-50 C. From this point on, says SD, there's more than one way to recover high-purity lithium chloride. But while hinting that it has a better method up its sleeve, the firm is keeping mum on all but the solvent extraction (with normal or iso alcohols) described in its patent.

Though the first installation of the chloride volatilization process is still in the talking stage, Scientific Design is satisfied that it's ready to go. The overall operation has been worked out on a small scale and the critical kiln phase has been tested successfully on a full-size unit.

Alkaline Leach: A more conventional process is followed at American Lithium Chemicals' new $6.6-million plant at San Antonio. Except for a few modifications necessitated by its different starting material—African lepidolite ore—ALC's operation is quite similar to the treatment used by Foote Mineral to recover lithium from spodumene.

Both plants begin by feeding a slurry of ground ore and limestone to a rotary kiln. Major difference in roasting operations at the two plants is that Foote's spodumene requires a roasting temperature of 1900 F, whereas ALC's lepidolite can be roasted at 1560 F.

After roasting, the ore-limestone mixture is pulverized, slurried by the addition of overflow liquor from subsequent thickening operations. Calcium oxide in the slurry hydrolyzes to the hydroxide, reacts with lithia to leach out lithium hydroxide.

Lithium values are concentrated in solution by a series of thickeners, separated from the gangue, which is discarded after washing and filtering strips out last traces of lithium. At this point, Foote and ALC take off on different routes tailored to suit each leach product.

In Foote's operation, strong liquor from the thickeners is passed through a filter, then into a triple-effect evaporator. Lithium hydroxide monohydrate is crystallized in the third effect, recovered as a crystalline product by centrifugation. Liquid from the centrifuge is further evaporated and filtered to yield additional LiOH and concentrated liquor for recycle.

ALC also uses triple-effect evaporation to concentrate strong liquor into a slurry of lithium hydroxide. But the high concentration of alkalies in the lepidolite leach product interferes with a single-pass recovery such as Foote uses. Further evaporation of the liquor coming from the centrifuge would result in a mixture of salts too thick to be filtered. So ALC carbonates the supernatant liquid, recovers last traces of lithium as Li_2CO_3.

Acid Leach: The standard process employed in Lithium Corp.'s new Bessemer City plant begins with decrepitation of alpha-spodumene in raw, unconcentrated ore. Beta-spodumene is slurried with sulfuric acid, heated in a rotary kiln to 450 F, at which temperature the lithia constituent is converted into Li_2SO_4.

From the roaster, the ore is transferred to a leach tank, where calcium carbonate (limestone) is added to neutralize excess acid, leach out the lithium sulfate. Gangue is removed by filtration, the filtrate passing to three cleanup tanks for treatment at controlled pH to drop out calcium and magnesium impurities.

Liquor is concentrated in a 5-effect evaporator, treated with carbon black, and filtered again for aluminum removal. Final conversion of the sulfate into crystalline lithium carbonate is effected by the addition of a soda ash slurry.

After they are washed in a 4-stage centrifuge, crystals are either dried and packaged as carbonate, or processed further for conversion into hydroxide, chloride, or other salts of lithium.

If the demand for lithium continues to grow at its present pace, chances are that all three systems will figure in future moves.

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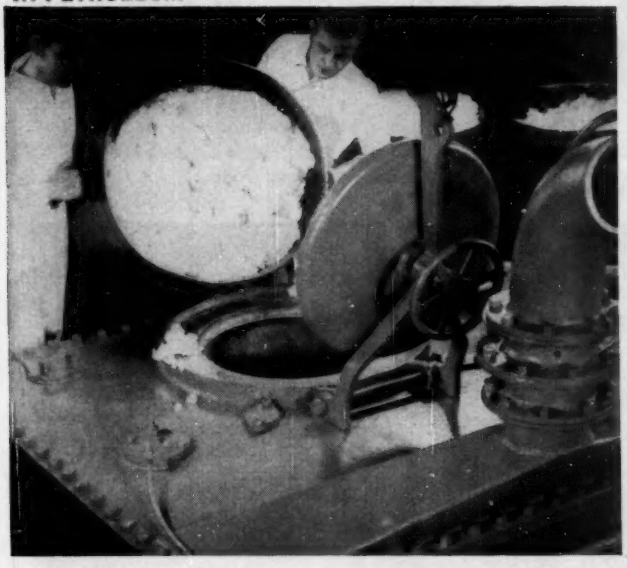

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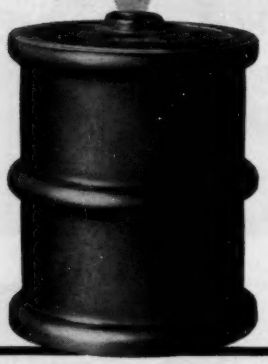

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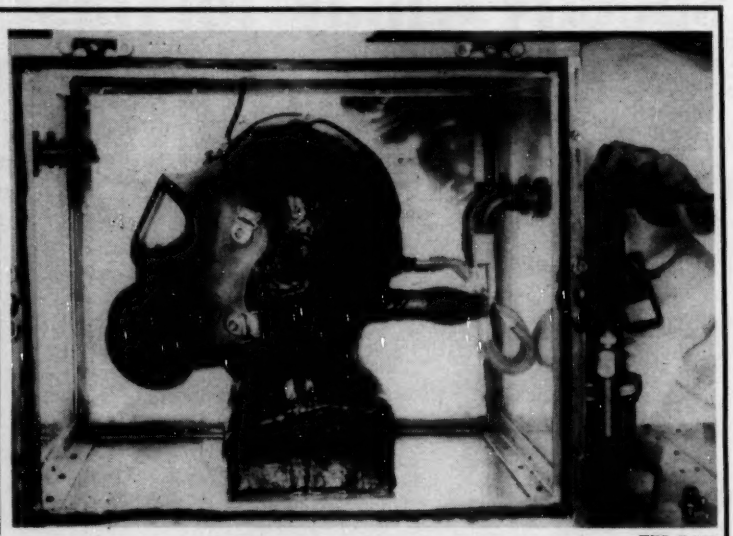
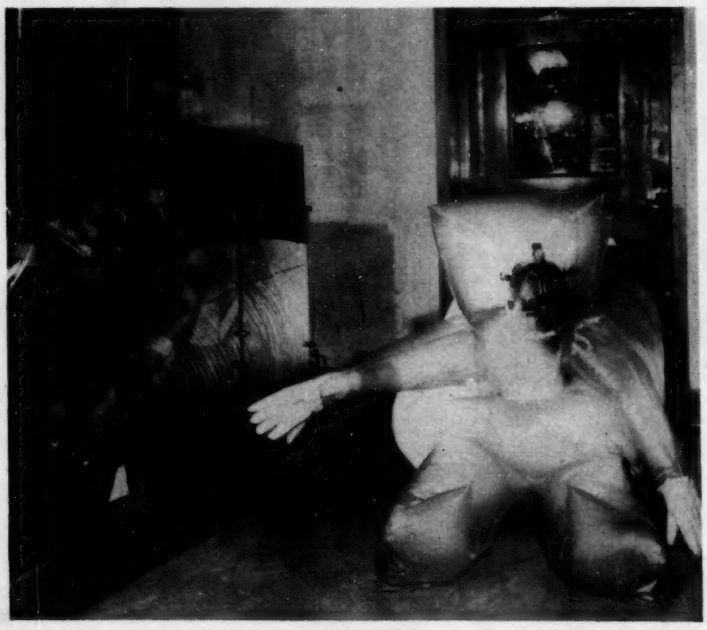


WIDE WORLD

Atoms Checked by Sniff and Puff

RADIOACTIVE HAZARDS call for some unusual headwork in designing and testing protective gear for atomic workers. To eliminate the risk to human "guinea pigs," General Electric engineers at the Hanford plutonium plant (Richland, Wash.) rigged a rubber stand-in (*above*) to test the efficiency of face masks. The dummy simulates human breathing by a system of multiple pumps. A filter built into its "windpipe" collects radioactive particles that pass through a mask. Workers entering "hot" areas go in through a flexible tunnel terminating in a balloonlike plastic suit (*below*). Reduced air pressure in the contaminated area keeps suit inflated, assures that any leaks will be into, rather than out of, the hazardous zone.



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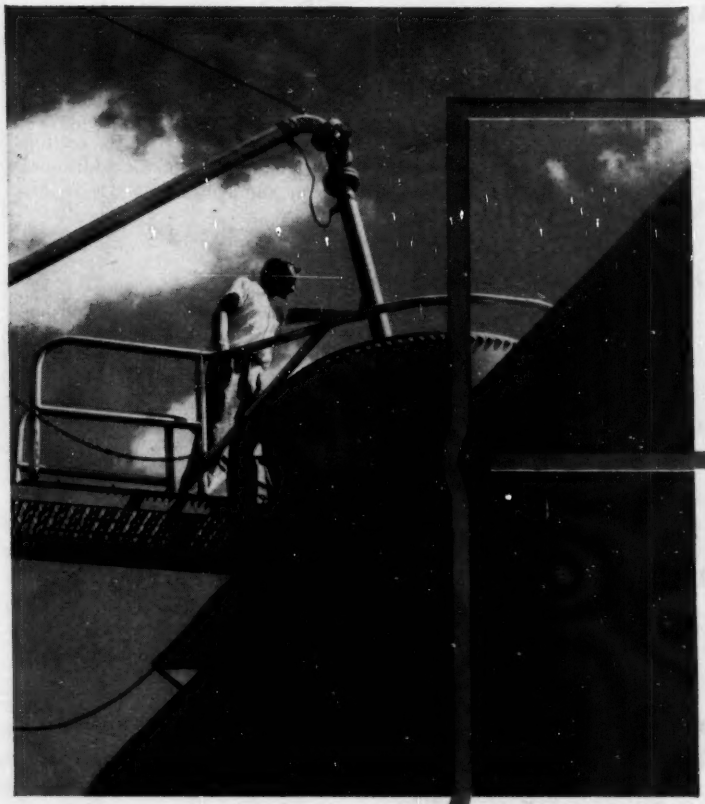

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WHAT THEY SAID

At the 7th Plant Maintenance & Engineering Conference

On contract maintenance—

The use of independent contractors as an adjunct to the normal engineering, supervision and maintenance or mechanical section work . . . makes . . . available to the plant engineer an additional pool of talent and manpower, which can augment the efforts of his own organization.

Henry Killmar, Carborundum

On teamwork in maintenance—

Funk & Wagnalls says a team is 'two or more beasts of burden harnessed together.' . . . Our general foreman of maintenance agreed that definition for maintenance people was all right.

Ervin Seltzer, Electric Storage Battery

On maintenance yardsticks—

One of the most discouraging aspects of the current management attitude toward maintenance is the continued and widespread demand for a simple yardstick to measure over-all performance.

R. I. Reul, Food Machinery and Chemical

On preventive maintenance—

There no longer remains much question as to the value of preventive maintenance, although the degree to which it is employed (still) varies from plant to plant and from industry to industry.

I. G. Sunderman, Bakelite

On automation—

We can keep on trying as hard as possible to improve ourselves without feeling that we are going to have on our consciences the responsibility for putting a lot of people out of work.

L. C. Morrow, general chairman of the conference (and consulting editor of *Factory*)

THEIR GOAL . . .

Keeping Production on the Line

A stitch in time saves nine. And routine checks of motors and pumps can save you a whole day's downtime. Maintenance men agreed on both at the 7th Maintenance & Engineering Conference (held concurrently with the 7th Plant Maintenance & Engineering Show) in Philadelphia last fortnight.

For the men who are charged with keeping the chemical plants operable, the show is the big one of the year. In past years, one of the strongest undercurrents of conversation dealt with breakdown vs. preventive maintenance.

There are still plants and processes, of course, where the breakdown maintenance approach is still the most economical. And there is still a danger of overemphasizing preventive maintenance. By and large, however, the men who attended the conference this year seemed to agree with I.G. Sunderman (*see above*) of Bakelite, who said there's no longer any question about the principle—only the extent to which it can be applied in various processes.

How Much Is Good? One of the talks that generated interest in Philadelphia was delivered by Food Machinery's R. I. Reul on yardsticks to measure the effectiveness of maintenance.

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PRODUCTION. . . . .

He likened the search for a yardstick to measure effectiveness of maintenance to the alchemists' hunt for the philosophers' stone. Although he freely admits that some of the methods used accomplish remarkable results, he feels that the problem entails more than merely seeking a means of measuring performance. His point: "If you want to obtain a reliable measurement of maintenance performance, you have to define the function carefully, then segregate costs so they include all maintenance costs and nothing else.

"After you have obtained statistics over a period of time, you can judge whether or not you're improving. And you can tell when and where you may be going wrong."

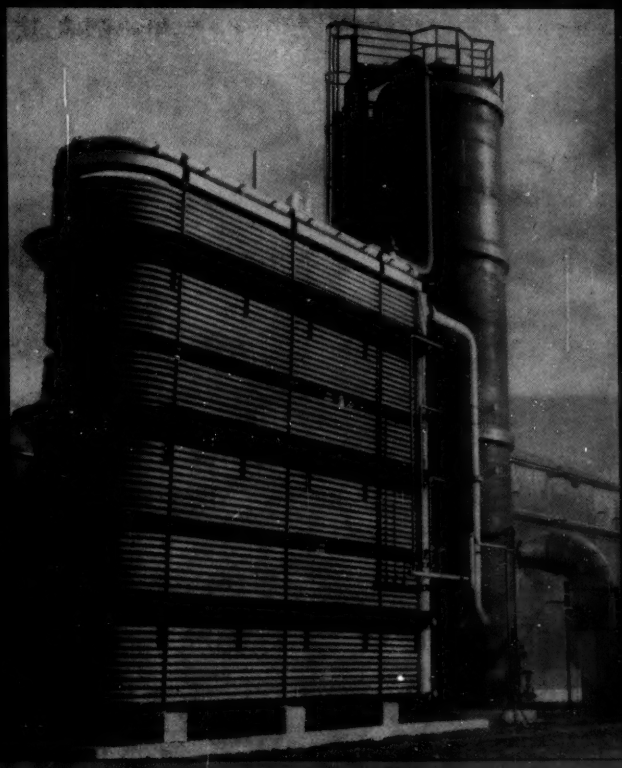
In a different vein, Ervin Seltzer, of Electric Storage Battery, made some suggestions on encouraging teamwork among the maintenance crew. Fundamentally, they call for planning work and recognizing services. He added that you should not overlook more concrete steps—such as suggestion systems, profit-sharing, performance reviews. And teamwork is necessary in maintenance, for, as he points out, "If politics is the art of the possible, then maintenance is the art of the impossible."

•

Self-Cleaning Filter: Industrial Filter and Pump Mfg. Co. (Chicago) is out with its new Hydra-Shoc tubular filter that's said to require no back-flow pumps or other extra equipment for cleaning. The filter shell itself acts as a pressure chamber in which air pressure builds up at the end of the filtering cycle. Cleaning is accomplished by a sudden back-surge of the compressed air as a pair of quick-opening valves simultaneously shut off the inlet and open the drain. Hydra-Shoc units are built to ASME construction code in a wide range of materials, with lined or unlined chambers.

•

Tube Expander: Torq-Air-Matic is what Thomas C. Wilson, Inc. (Long Island City, N.Y.) calls its new tube expander control. Said to be the first all-air control, it's also the first to register torque output reading directly in foot-pounds instead of in arbitrary units. This feature, says Wilson, increases heat-exchanger efficiency by eliminating over- and under-rolling, by holding tube bowing to a minimum.



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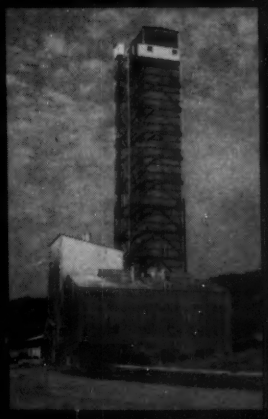

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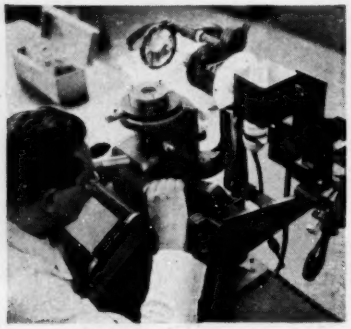

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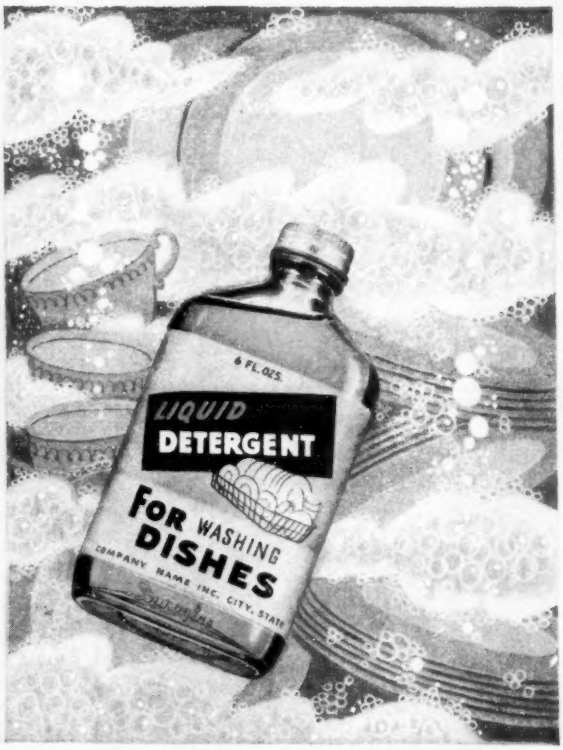

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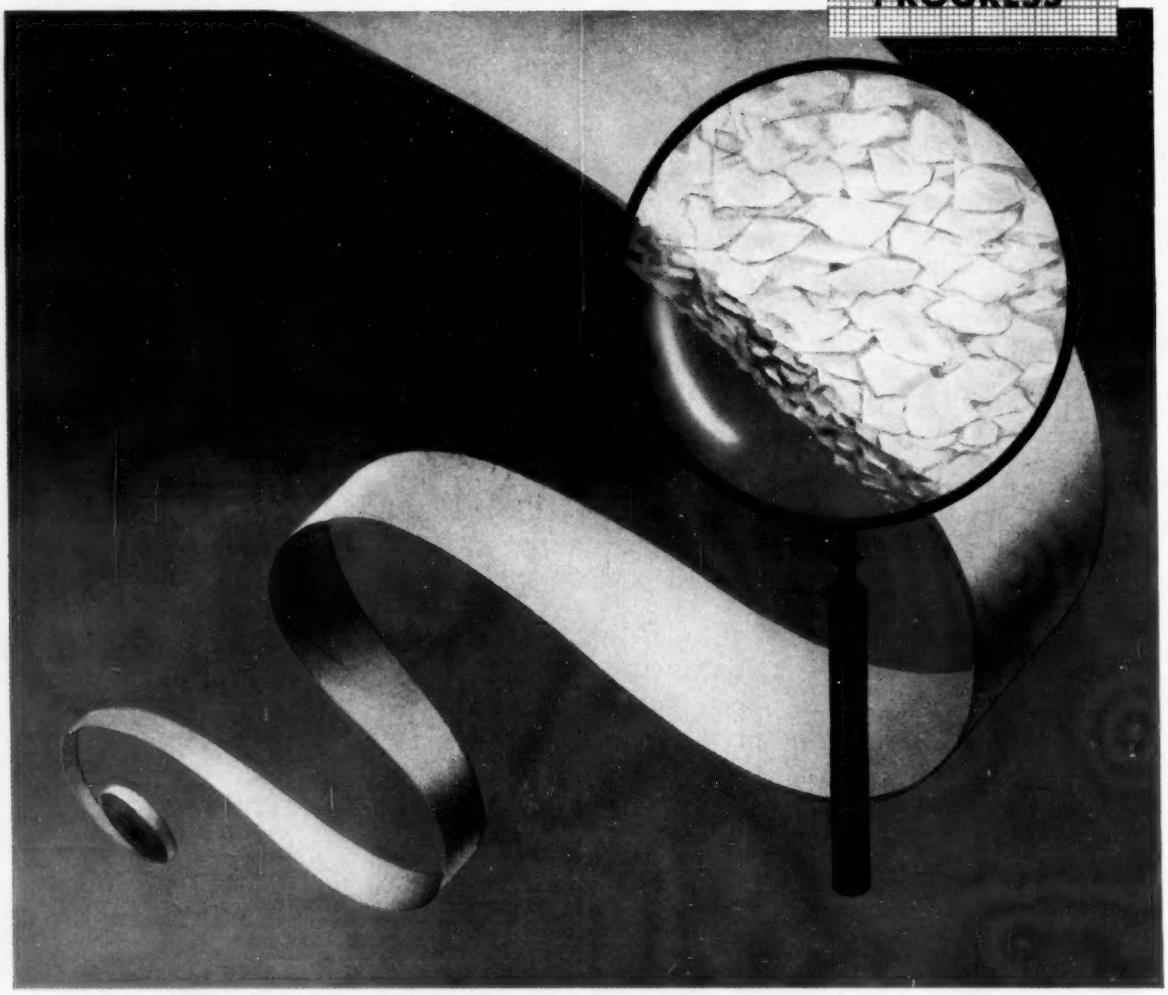

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CHEMICAL WEEK
February 11, 1956

Marketing men spelled out the problems—at the Chemical Market Research Assn. meeting in Pittsburgh last week (*see p. 75*). But finding the solutions is a job for chemists and engineers.

One of the highpoints of the meeting was a session dealing with naphthalene-phthalic anhydride. The difficulty, as pegged by panelists, is that the demand for phthalic is growing faster than is the likely supply of raw material, naphthalene—tied to the production of steel (by coke ovens).

A fairly obvious technological way out is to increase the yields of naphthalene from the tar by improved processing. And that's being done all the time. But a long-range solution might entail the tapping of now-plentiful petroleum sources.

Naphthalene itself could be isolated from petroleum—or methyl naphthalene could be de-alkylated. Two petroleum refiners are thought to be seriously considering the latter. The present price of naphthalene, however, may not be enticing enough to warrant handling of the necessary large volume of material. Also, the grade produced qualifies as premium in quality. But the market for such a quality is limited.

Another means of accomplishing the same thing, of course, is to use *o*-xylene as a raw material for phthalic. Oronite has been doing just that for years. And Standard of Indiana, through its purchase of Scientific Design's liquid-phase catalytic air oxidation (*CW, Dec. 31, '55*) will be in a position to do it, too. Other firms have been set up to operate on *o*-xylene as alternate feed (e.g., American Cyanamid) but except in times of naphthalene shortages, they have not found the economics attractive.

The question of utilizing xylenes as chemical raw materials is complex, doesn't easily lend itself to generalizations. But here's one thing to keep in mind:

***o*-Xylene is perfectly satisfactory in a mixture** for improving the octane rating of regular gasoline. But it's possible to improve the rating for aviation gas by removing ortho from the mixture. And this separation, unlike the removal and separation of para, for instance, is not too difficult.

What it means is that, with the trend to higher octanes, the refiner has an added incentive to remove *o*-xylene and sell (or use) it is a raw material for phthalic—without finding chemical markets for the meta and para that are produced concurrently.

With *o*-xylene destined for a bigger role in the production of phthalic, the next logical step would be a greater reliance on refinery techniques. And that's exactly what's going to happen, because . . . .

One firm is on the verge of building a fluid-bed phthalic plant that will use *o*-xylene as a starting material. Fluid-bed plants have been tried before on phthalic, but they've all been based on naphthalene. Nobody has ever tried a fluid-bed *o*-xylene plant on anything approaching a commercial scale, even though this has long been postulated as an attractive processing possibility.

Now, however, Brown, Blauvelt and Leonard, New York engineering firm, is offering to build a plant around such a process. And it has very likely found a taker in Hatco Chemical (Fords, N.J.). Hatco President William Hackman states emphatically that his firm has made no commitments. But his company is a large user of phthalic (probably close to 10 million lbs./year) for its plasticizers, and has clearly evidenced a desire to integrate backwards (*CW,*

Nov. 20, '54, p. 36). In fact, at this moment, it's probably lining up an *o*-xylene supplier.

Before going off the deep end about fluid-bed phthalic, however, it's worth remembering that such processes have not always lived up to their promise.

Sherwin-Williams thus far has been the only U.S. manufacturer able to make the process go. It started a small fluid-bed phthalic unit in 1944, chose the same route for its $1-million expansion in 1952 (*CW, Feb. 23, '52, p. 40*). The firm is happy with the process now, but makes it clear that advancing it to this stage took a lot of engineering doing.

American Cyanamid chose the fluid-bed route for its Bridgeville, Pa., phthalic plant. Full reports on the unit are not yet in, but the company went through an agonizing shakedown period, and it's doubtful even now that all the kinks are out.

Kellogg built a 35-million-lbs./year plant for ICI in England. And that plant too has had its troubles. A unit Foster Wheeler built for United Steel in England is reported to be operating "satisfactorily," but it's doubtful that it would be satisfactory by Sherwin-Williams' standards, for instance. Even oxidation-smart Carbide stubbed its toe on a fluid-bed process for maleic, closely related to phthalic. (Corrosion is a bigger headache in processing maleic, however.)

All in all, performance of fluid-bed processes in chemical (rather than petroleum) plants has been disappointing enough to completely sour some early, ardent enthusiasts of the technique. This is a far cry from a few years ago when the fluid bed was being hailed as the answer to just about everything.

Actually, the true value of fluid bed lies between the two extremes. It's a versatile technique that can be useful in many places. One lesson is clear: trouble at the start doesn't necessarily mean the process is a failure. And Sherwin-Williams isn't the only one to learn that; Du Pont had a lot of difficulty bringing in its fluid-bed process for making titanium tetrachloride (*CW, March 19, '55, p. 84*).

•

The ortho isomer isn't the only one that's getting attention. By a conservative estimate, there are more than a billion pounds of xylenes available, and chemical companies are actively exploring their potential. Oronite, which uses the ortho for phthalic, last month put its isophthalic acid plant onstream. It's already pilot-planting dimethyl terephthalate and terephthalic acid, conducting an extensive market research program on them. And Celanese, which has been looking at xylene oxidation processes for some time, is renewing its interest. It's now taking a look at Richfield's process.

•

Kellogg is revealing this week that it's the fourth licensee (*CW Technology Newsletter, Nov. 12, '55*) of the Phillips "polyolefin process." It won't be in production, however, for at least 1½-2 years.

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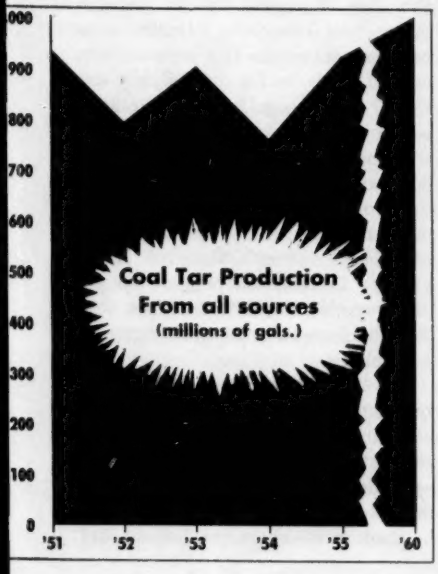
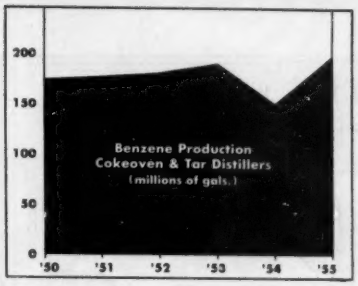
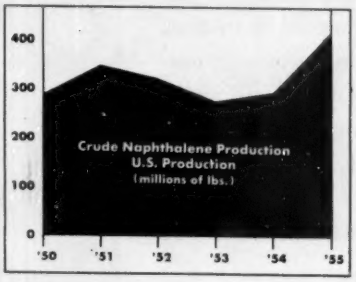
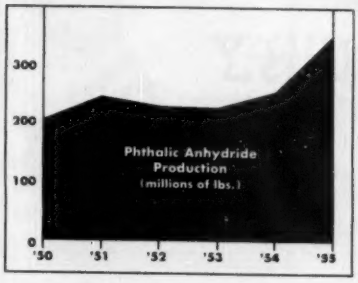
Are slide rules going to pastels? Not quite, but Pickett and Eckel is now selling a yellow one, on the theory that yellow blocks other reflected colors in the spectrum, makes scales easier to read.

MARKETS . . .









What's the outlook for coal tar and related chemicals? CMRA, in Pittsburgh, cites . . . .

An Uptrend in View

What's the future of aromatic chemicals? Last week, in appropriately chosen Pittsburgh, Pa., several hundred members of the Chemical Market Research Assn. discussed that question. Experts in the field covered the near- and far-term growth prospects of the over-all coal-tar chemical industry; the outlook on phenol and high-tar acids; the naphthalene-phthalic anhydride picture; U.S. benzene supply and demand factors.

Features of the two-day (Jan. 31-Feb. 1) get-together—which included side trips to chemical and related products companies in the area—were panel discussions on the technical papers, given in Webster Hall Hotel.

After introduction of the Wednesday morning program by Koppers' Henry Lavely, Thomas Kinsella, president of Allied Chemical & Dye's Barrett Division, scanned the present and future of the primary products of coal-tar distillation—creosote oil, tar acids, naphthalene and the tar bases, pyridines, and quinoline.

Kinsella noted that the growth prospects of most coal-tar chemicals are indeed bright, but the major problem facing the industry is how to obtain such growth "most quickly and economically." While long-range trends may definitely point to direct recovery of chemicals from coal, he said, it's obvious that near-term growth must depend upon greater yields from available tar and upon utilization of such petroleum crudes as may be obtainable.

Kinsella pointed out that broader distribution of natural gas has practically eliminated one important source of coke-oven and water-gas tar and light oils. Public utilities producing illuminating gas turned out only 63 million gal. of tar during 1954, compared with some 209 million in 1929—a percentage drop from 30% of available tar in the earlier year to 8% in '54.

During the past five years, the amount of coal tar produced from all sources has averaged 875 million gal./year. By 1960, coal-tar supply (based

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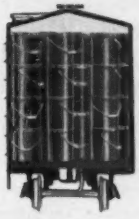

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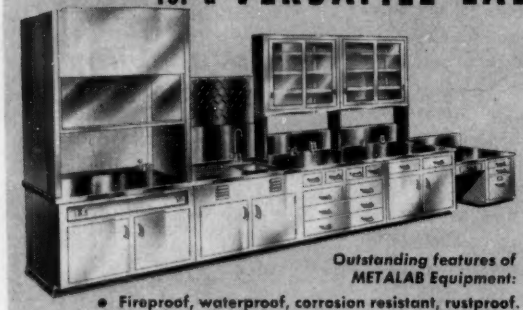

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MARKETS . . . . . .

on projected steel demand of 120 million tons of ingots) will be about 1 billion gal. This, said Kinsella, does not represent much of an increase from current levels, and is only slightly less than 1.2 billion gal. of coal tar forecast for 1975.

Industry, in some cases, has revised downward some of the overly optimistic projections of chemical requirements for the future—naphthalene, for one. The President's Materials Policy (Paley) Commission pegged demand 20 years hence at 3.32 billion lbs.; Kinsella favors a much lower figure of 1.34 billion.

Government estimates for future requirements for cresols and cresylics also run ahead of expected supply. The forecast—500 million lbs./year by '75—would call for about three times as much coal tar as will then be available. Solution to the shortages, he said, lies

Nitrate: Readying

THIS WEEK, demand for ammonium nitrate is perking—for a couple of reasons: formulating for the spring planting season is rapidly getting under way; bulk of the 30,000-tons maximum asked on the latest Korean bid reportedly will come from U.S. suppliers.

And adding interest to the supply

largely in the direct recovery of aromatic chemicals from coal or in the production of satisfactory intermediate fractions from processing ligneous coals.

Phenol Trend-Line—Up: In the second paper of the morning session, James Lum, managing director of development of Monsanto's Organic Division, outlined upward trends of phenol capacity and production. By 1958, Lum envisions that present U.S. capacity, estimated at about 650 million lbs./year, will have been absorbed.

U.S. production potential, by then, he reported, should be in the range of 700 million lbs.

He noted that the distance between production and sales of phenol appears to be increasing, and offered the explanation that "phenol producers are channeling more and more phenol toward captive uses, and thereby com-

for Spring Markets

picture is a new source: Mississippi River Chemical, now producing and shipping ammonium nitrate (solid and solutions, *see cut**) as well as anhydrous ammonia from its new $16-million Selma, Mo., plant.

*In the photo, left to right: Mississippi River Chemical sales manager John Sanders; James Mathers, Bradley & Baker (St. Louis); Cecil Lashlee, plant manager, and R. G. Powell, technical service director, of MRC.

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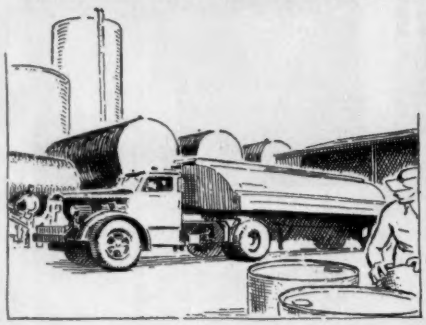

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pensating for production surges."

In plotting the estimated use of cresols and cresylic acids. Lum also scored some Paley Commission forecasts (*see table*):

Cresols and Cresylic Acids End-Use
(million lbs./year)

	1950	1955	1975
Phenolic resins	38	64	340
Tricresyl phosphate	16	17	21
Ore flotation	10	12	20
Disinfectants	8	9	13
Other	22	29	54
Total	90	135	448

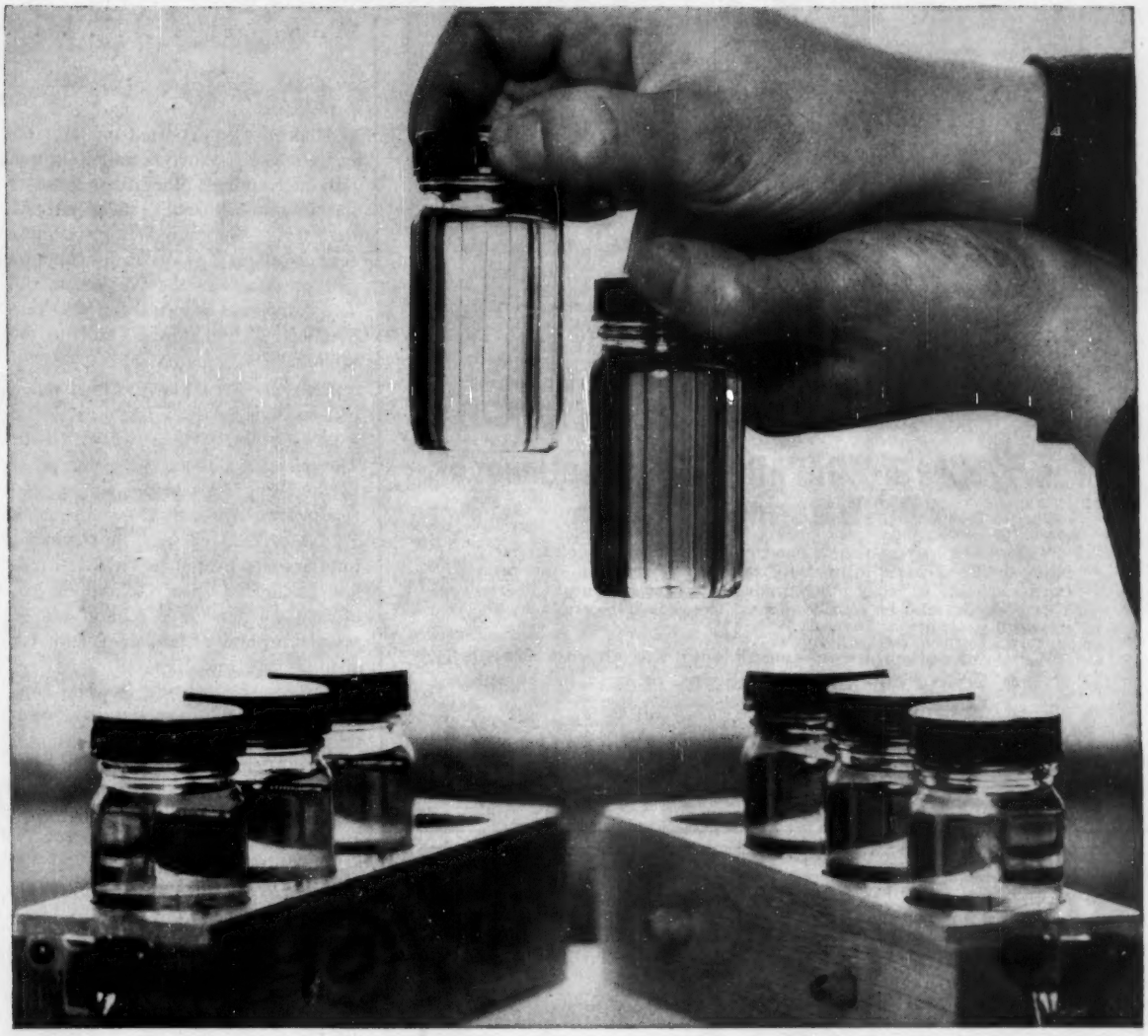
He believes, for example, that the commission's ninefold expansion forecast in phenolic resins is too optimistic. On the other hand, tricresyl phosphate use, Lum said, will probably scale to a considerably higher 70-million-lbs./year range by 1975. Bolstering his premise: last year, actual requirements were 30 million lbs./year.

Lum also discussed the present and future U.S. fuel situation, drew the conclusion that in the next 20 years the American economy should see at least a twofold increase, resulting in an increasing demand for phenol and higher phenols.

Naphthalene-Phthalic Tie-in: E. C. Medcalf, manager of the coal tar chemicals department of American Cyanamid, reviewed past production figures for naphthalene and phthalic anhydride, estimated potential output of the former from coal tar, and related the possible increase of naphthalene produced from coal tar to probable requirements. In addition, he discussed substitute raw materials for the production of phthalic, and reviewed the situation concerning products competitive with phthalic anhydride.

In his sum-up, Medcalf said that it is evident there is sufficient naphthalene in coal tar to support foreseeable requirements through 1960, but he questioned whether the tar industry is ready to meet this demand. If not, he said, other alternatives must be explored. Oronite has used ortho-xylene as a raw material for phthalic for several years, and, reports Medcalf, other companies are interested in using this and other alternate materials.

Another significant possibility as a phthalic raw material: methyl naphthalene, adequate quantities of which are



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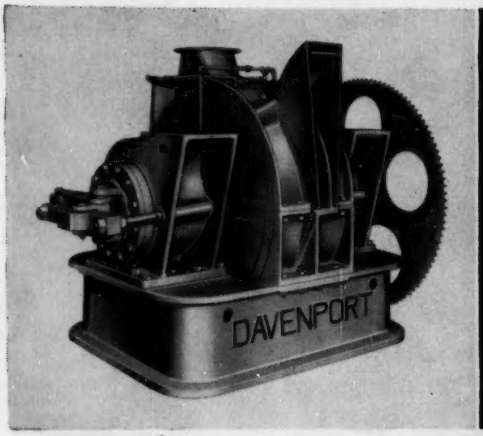

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available from both coal tar and petroleum.

Medcalf also reported on phthalic-naphthalene production and consumption in countries other than those in the Communist zones, indicated that the U.S., Germany, England and France led, in that order, as naphthalene producers of the Western world. The '55 figures respectively: 440 million lbs.; 155 million; 92 million; 64 million.

Benzene Breakdown: How much benzene was available last year? From what sources? Where was it used? These, and just about every other market question likely to pop up on benzene, were covered by Dow Chemical's Paul Meeske. Last year, he estimates, total benzene availability was 310 million gal., made up of 175 million gal. of coal chemical, 100 million gal. of petroleum, and 35 million gal. of tar distillers and imports.

Almost 42% of the benzene consumption is for styrene and about one-third of the styrene is used for rubber. From this springboard, Meeske moved in for a closer look at these two commodities, as well as most of the other important outlets for benzene.

Styrene use of the aromatic, for example, may increase an additional 10 million gal., check out 1956 at some 130 million gal. Phenol, taking benzene at nearly 63 million gal./year, will likely continue consuming it at that rate through this year. DDT may also stay at recent levels, but aniline and maleic anhydride are expected to hike their benzene take 10% in '56.

Panel Procedure: As mentioned above, each paper given at the meeting was a topic for panel discussion—and questions arising from the floor contributed to the lively pace of the aromatics get-together.

The panelists included: L. A. Schlueter, American Coke and Coal Institute; W. A. Woodcock, Carbide and Carbon; W. G. Kinsinger, Hercules Powder; William Elwell, Oronite Chemical; James Sayre, Allied Chemical & Dye; J. W. Clinton, U.S. Steel; M. W. Leland, Shell Chemical. Introduction of the afternoon program was by F. G. Garrison, Columbia-Southern.

Wind-up of the two-day program featured an after-dinner address by Fred Foy, president of Koppers. His topic: "Facts or Fog"—a discussion of the need for research in the field of human relations.

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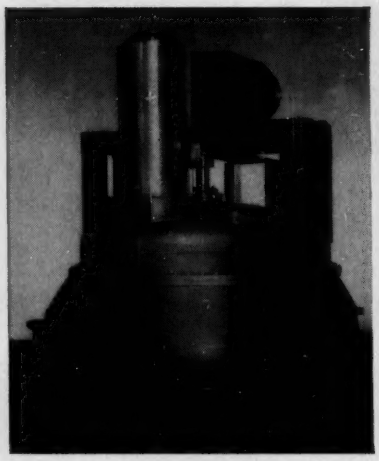

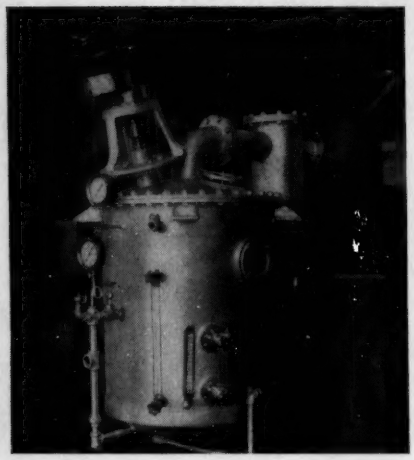

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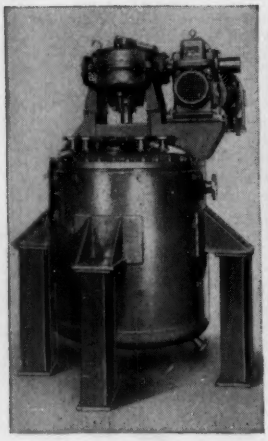

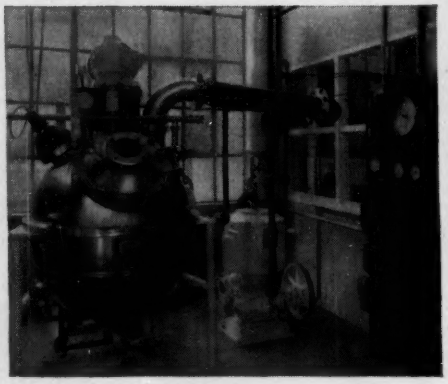

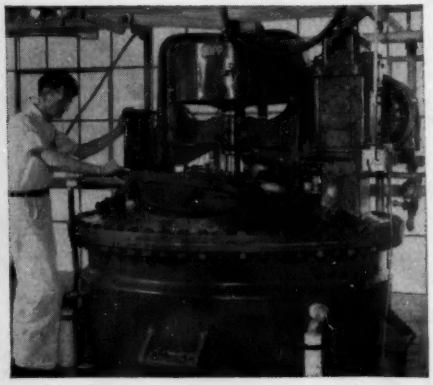

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Market
Newsletter

CHEMICAL WEEK
February 11, 1956

Domestic crude glycerine prices are slipping again—paralleling the market condition noted here a couple of months ago (*CW Market Newsletter, Dec. 24, '55*). Current reports circulating in the trade indicate that some sales of soap lye material are being made at 18¢/lb., and saponification grade at 20¢. That's a full 1¢/lb. less than previous schedules on the domestic crude.

Softness in crude, however, isn't affecting the refined glycerine market. Demand for the latter is still barreling along, and few expect any appreciable near-future slowdown.

Refined glycerine (synthetic and natural) prices, too, appear to be firmly pegged at today's 30¢/lb. tank level.

Some truckload users of cylinder chlorine will feel the impact of a change in Pennsalt's pricing policy. The new truckload deal will apply to customers taking a minimum of 75,000 lbs./year. Earlier t.l. pricing was based on a minimum annual consumption of 50,000 lbs.

The change, though, will affect only the states east and north of and including Michigan, Ohio, Kentucky and Virginia. Reason for the hike, says Pennsalt, is increased costs of containers.

•

If you're shopping for bulk quantities of specialty chemicals, take a look at Winthrop Laboratories' (Special Chemicals Dept.) just-out '56 descriptive price list catalog. Over 100 bulk items are listed, including more than a dozen new ones.

Among the additions: basic intermediates 3-nitrobenzoic acid, and 3-aminobenzoic acid; dihydrocholesterol, meta-hydroxy-propiophenone. Bonus for buyers: many of the company's amino acids will carry a lower price tag.

•

Formal dedication ceremonies won't take place until late next week, but already Escambia Bay Chemical's multimillion-dollar Pensacola, Fla., plant is turning out some 200 tons/day of anhydrous ammonia. Also heading for an eight-state Southern market via rail and truck: ammonium nitrate solutions.

Speaking of Escambia's expansion plans, the firm this month awarded a contract for construction of a 30 million-lbs./year polyvinyl chloride resin plant near the ammonia site. Completion is scheduled for late this year.

More polyvinyl alcohol is hitting the market. A new unit that will double Du Pont's Niagara Falls production has been brought in ahead of schedule. One probable reason for the haste: demand for the synthetic resin has ballooned, and despite the fact that the Du Pont installation has been running at full tilt for the past year, it hasn't been able to keep up with orders.

Same location is undergoing a couple of related Du Pont expansion projects. One will increase vinyl acetate capacity by September; the other, slated for completion a few months later, will substantially step up polyvinyl acetate emulsion production.

•

Ammonium sulfate stocks, high enough to cause some brow-wrinkling among producers, will be pared somewhat. Korea, reportedly, has accepted bids for about 90,000 metric tons of coke-oven sulfate and 17,500 tons of synthetic.

The out-of-country shipments won't blot up all the ammonium sulfate around, of course, but sellers are also looking for a pickup in domestic demand. Latter is expected during the next few weeks.

Imminent, too, is industry-wide acceptance of higher prices on refrigeration grade methyl chloride in cylinders. Some makers posted the changes Feb. 1, others are doing so now.

Wholesale prices to manufacturers are going up, in general, 1¢/lb. for large cylinders, 3¢/lb. for medium. Typical wholesale tags: 1,300-lbs.-capacity cylinders, 46¢/lb.; 140-, 100- and 60-lbs. capacity, 48¢/lb.

Prices to servicemen will also be higher: for example, by 5¢/lb. for medium-size containers. Shipments are on a prepaid basis if total weight amounts to 200 lbs. or more.

•

On the other hand, the methanol price structure appears to be quite firm, despite the pressure of a somewhat snug supply condition. Fact is, just about all producers are pressing to meet consumer demands, which have been well-sustained over the past several months.

•

Calls for tin salts aren't falling off, but this week's lower prices on a few derivatives are being attributed to a weakness in the metal market. Tin has slipped about 4¢/lb., is down to 99¢/lb. spot for Straits material.

Tin chemicals reduced include: potassium stannate to 70.1¢/lb.; sodium stannate now selling in a range of 57.1-60¢/lb., compared with the previous schedule of 58.4-61.3 ¢/lb.

Rising costs of selenium is expected to hike prices on red and yellow shades of cadmium lithopone colors—and soon. While producers recently boosted selenium to a high of $15.50/lb. (*CW Market Newsletter, Feb. 4*), resellers fortunate enough to have a few lots on hand are asking as much as $30-35/lb.

Basis for the color prognostication: six months ago producers' selenium prices were advanced by $3/lb., and, within a couple of weeks, the lithopones went up. Latest selenium boost—$5/lb.

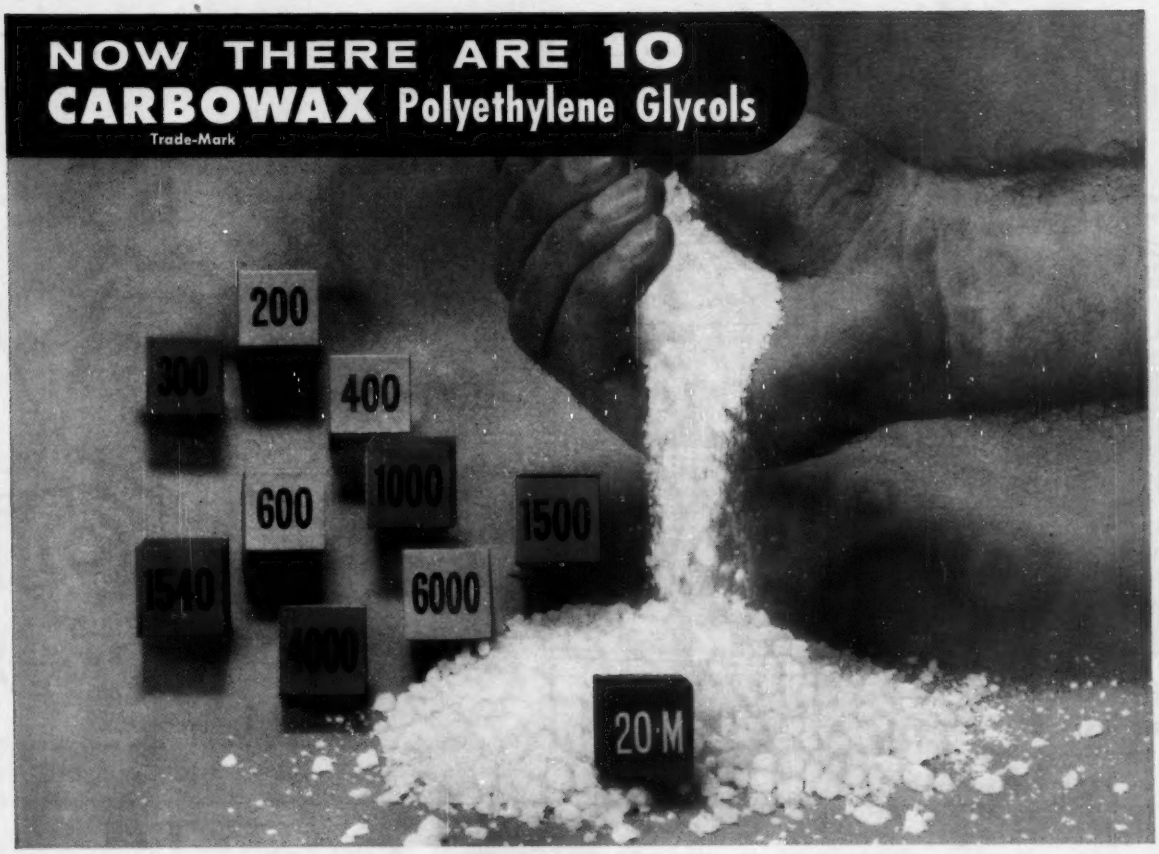
•

The government is going ahead with its palm oil stockpile-trimming (*CW, June 25, '55, p. 82*). Prospective buyers will be offered an additional 20 million lbs.—30 million were released earlier—with date for the sale set for Aug. 6. As before, General Services Administration will avoid disrupting the market, sell quantities at intervals instead of lump-dumping.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending February 6, 1956

	Change	New Price
UP		
Methyl chloride, refrig. grade, mfrs., 1,300-lbs.-cap. cyls., dlvd	$ 0.01	$ 0.46
Potassium chloride, 99.3% KCl, bulk, c.l., wks., ton	1.00	26.00
Sulfur dioxide, refrig. grade, 150-lbs. cyls., dlvd.	0.03	0.30
DOWN		
Glycerine, crude		
Soap lye, 80%, tanks	$ 0.01	0.18
Saponification, 88%, tanks	0.01	0.20
Stannic chloride, anhyd., dms., wks.	0.01	0.785

All prices per pound unless quantity is stated.



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CARBOWAX polyethylene glycols are widely used as solvents, humectants, lubricants, and intermediates. They have become increasingly important as vehicles for medicaments and cosmetics, as mold-release agents, textile lubricants, softeners, antistatic and conditioning agents, and as intermediates for surfactants and synthetic resins.

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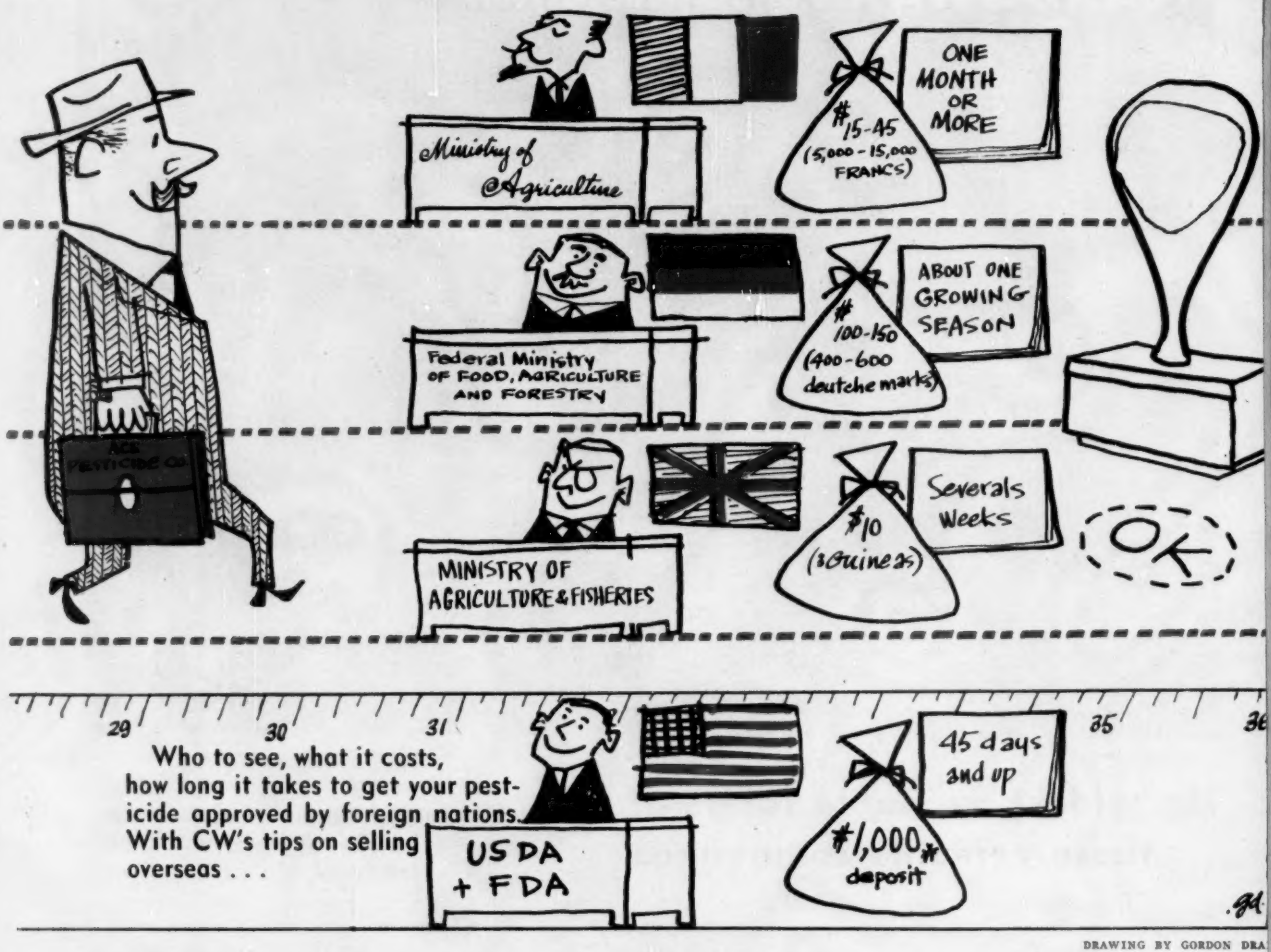
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You Don't Have to Be an Innocent Abroad

Any scientifically minded producer of agricultural chemicals can tell you that the grass on the other side of the fence is not really greener—it's an illusion, often created by wishful thinking. Yet, on the matter of federal regulation of pesticidal chemicals, plenty of these same firms complain that most nations have laws that are "easier" than those of the U.S. Is it a case of wishful thinking again? Would a U.S. firm trying to sell its pesticides abroad find things aren't as simple as they seem?

To answer this, and to give domestic companies an idea of precisely what they would face in trying to market their products abroad, *CW* last week checked with authorities in England, France and Germany.

A Step Ahead: Although it is difficult to note any broad generalities about the comparative regulations, a couple of things are immediately apparent.

- In Europe, greater responsibility is put on the dealer in chemicals classified as poisons—which would include most pesticides.
- Where the basic producer of pesticides in this country must abide by two laws* (registration with the U.S. Dept. of Agriculture under the Federal Pesticide and Rodenticide Act, and establishment of permissible residues under the Miller Pesticide Residue Act), English, French and German manufacturers need only go through a procedure comparable to registration with USDA. The Miller Act is a long step ahead of almost every other nation's laws.

But generalities obviously aren't what you're after if, for example, you've got a new insecticide you want to sell abroad. Here's a closer focus on the foreign scene.

Voluntary Regulation: In England, emphasis is on voluntary regulation. (Currently, the government seems almost entirely concerned with protection of agricultural workers during spray operations.) But there is a strong chance that the situation will change

*State regulations are also of concern in the U. S.—not so much because of their stringency as because of the fees involved.

*Fee is paid by firm first getting tolerances on the chemical; others making exact chemical do not have to pay this fee.

toward more government supervision.

The composition, dosage, application, product strength limits, and residues are not controlled by legislation, but instead by the British Assn. of Insecticide Manufacturers. Since 1942, a Voluntary Crop Protection Products Approval Scheme (led by government representatives, and a joint panel of government and industry personnel) has guided growers in the purchase of pesticides. Products meeting this group's standards receive approved labels and are on an approved list prepared yearly by the Ministry of Agriculture.

There is nothing that plainly compels a firm to submit a product for approval—but testing costs only about $10 and does not take long. (*See chart* —times and costs are only approximate; time, in particular, can vary considerably from that shown.)

Other regulations applying to pesticidal poisons in Britain are the 1933 Pharmacy and Poisons Act (organophosphorus insecticides are included on this list) and the 1952 Poisons Rules. The word "poison" isn't required on labels (though dangers of inhaling or contacting chemicals must be stated)—but only licensed dealers can sell them, entering all sales in a "poison book."

What the British term "dinitrocresols" (most closely allied to our dinitrophenol herbicides) must be tagged "poison" in low-percentage formulas (5% or so). They can be sold freely but only by licensed dealers.

In England, DDT and BHC cause little concern—they are not classified as poisons, and are sold freely. For them, residue limits on food have been advised (nothing hard and fast about it)—7 ppm. DDT, 2.5 ppm. gamma BHC.

Advising Advisors: Since 1950, the Ministry of Agriculture has been advised by a committee headed by Professor Solly Zuckerman. This committee was behind the law protecting agricultural workers (Agriculture Poisonous Substances Act, 1952). More recently, it has suggested establishment of an advisory committee to investigate residues, provide data on toxicity, keep abreast of developments in other nations. An outgrowth of this may be more direct regulation of pesticides.

If you want to sell a pesticide in England, check first with Dr. E. J. Miller, of the Plant Pathological Laboratory (Ministry of Agriculture). And you should remember that agriculture chemicals imported by Britain pay a duty of up to 33% of the value of the pure chemical (a decreasing percentage in diluted chemicals) on top of the 10% import tax. And import approval might not be forthcoming on products that could be made in England.

Scents and Colors: Perhaps the most striking regulation on pesticide sale in France is the requirement that poisonous compounds be tinted and scented (e.g., DDT—powder, emulsion, or solution—must be colored violet, and must have a noticeable odor).

Two basic French regulations:

- For household products, compounds with "safe" (pyrethrum, for example) components are manufactured and sold without any control; those with active poisons must be sold only through pharmacies and then with a warning label.
- Agricultural pesticides must be sold only on authorization from the Ministry of Agriculture. The Ministry requires complete labels, colorant, odoriferant, etc.

The Ministry has its own laboratories for examining pesticides. The testing can vary considerably in complexity, and the cost to manufacturers can run from $15-$45 (registration itself costs nothing). Satisfactory compounds get an approval number and an approval date, which must be on all packages.

Too, labels must state active ingredient and its percentage, instructions on dosage, and precautions for handling. There must be a complete list of recommendations—spray times, etc.—for each type of chemical pesticide.

To sell your pesticide in France, it's most important to first get a French agent or "person resident in France." Duty charges vary greatly, depending on the chemical involved. Weight of active ingredients on formulated products is taxed at maximum rates for the component (up to 40% in some cases). In addition there are entry fees that amount to about 8%. But the rub, again, is that import

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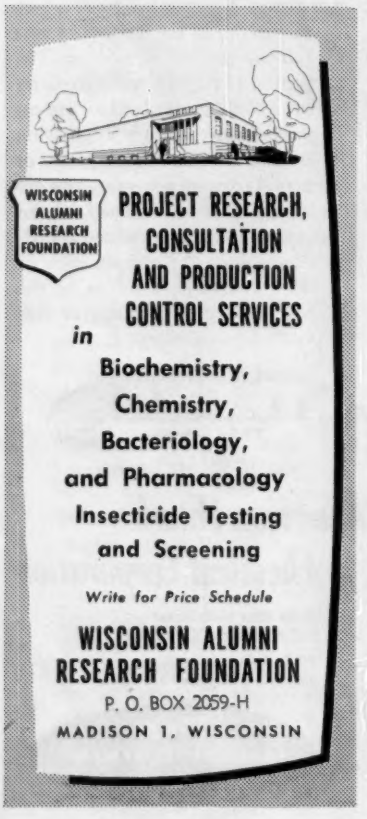


approval may not be given to products that could be made in France.

Seal to Sell: In Germany, as in England, emphasis is on voluntary regulation. Anyone may make or sell any kind of poison he wants to. But wholesalers and retailers won't buy a pesticide unless it bears a government seal, so virtually all firms try to get it.

The procedure is simple: the federal Ministry of Food, Agriculture and Forestry (Councillor Dr. Heinz Drees) handles the job. Professor Horst Mueller of the Biological Institute for Agriculture and Forestry deals directly with the manufacturers.

When submitted, a new pesticide is field-tested in various parts of the country for use on various crops. Toxic products are tested at the same time by the Federal Health Office, which works with the Food and Health official in approving toxic pesticides.

To speed product approval, Mueller urges firms to have their products tested by private labs and growers before they are submitted to the government. Just before a growing season seems to be the best time to send a product in for tests—reports on pesticides so timed are generally ready for examination by an evaluation committee, which meets in October or November.

Those products deemed useful are awarded an "approved" label and notice of the approval is published in a "Directory of Approved Pesticides," complete with maker's name and address. It is issued every spring.

U.S. manufacturers might be interested in the attitude toward approval costs: the Ministry's Dr. Drees says, "While large firms may pay up to 600 Deutsche marks, we realize that some manufacturers don't have very much money; in that case, the government makes individual arrangements that won't hurt the small firm so much."

Poison Class: Agricultural Ministry approval is just one factor affecting pesticide sales. The law on traffic with poisonous substances enters into the picture, too. Three types of toxic products are registered. Class I and II products can't be sold freely—dealers must have a poison certificate (license) and keep a poison book. Agricultural chemical makers shoot for a Class III listing, so that their material can sell with a minimum of restriction.

To sell in Germany, you, as a U.S. manufacturer, proceed much as a local firm would—contacting first the Biologische Bundesanstalt fuer Landwirtschaft und Forsten (Braunschweig, Germany). But if you imported your chemicals, you'd have expenses besides the licensing costs—duty that is now about 20% of the pure chemicals value, but likely to be reduced.

Dual Leadership: It is plain that foreign pesticide makers face less red tape, and pay less, for the right to sell their wares than do their U.S. counterparts—though a listing of regulations doesn't always indicate the complexities in complying with them. But the differences will probably not always be great; it's probable that the U.S. Miller Pesticide Amendment will guide other nations in their future legislation.

And the Miller law was worked out with complete industry help and cooperation. Not only do U.S. pesticide makers deserve credit for pioneering valuable new chemicals; they rate it for their farsighted work in making their new inventions safer to use.

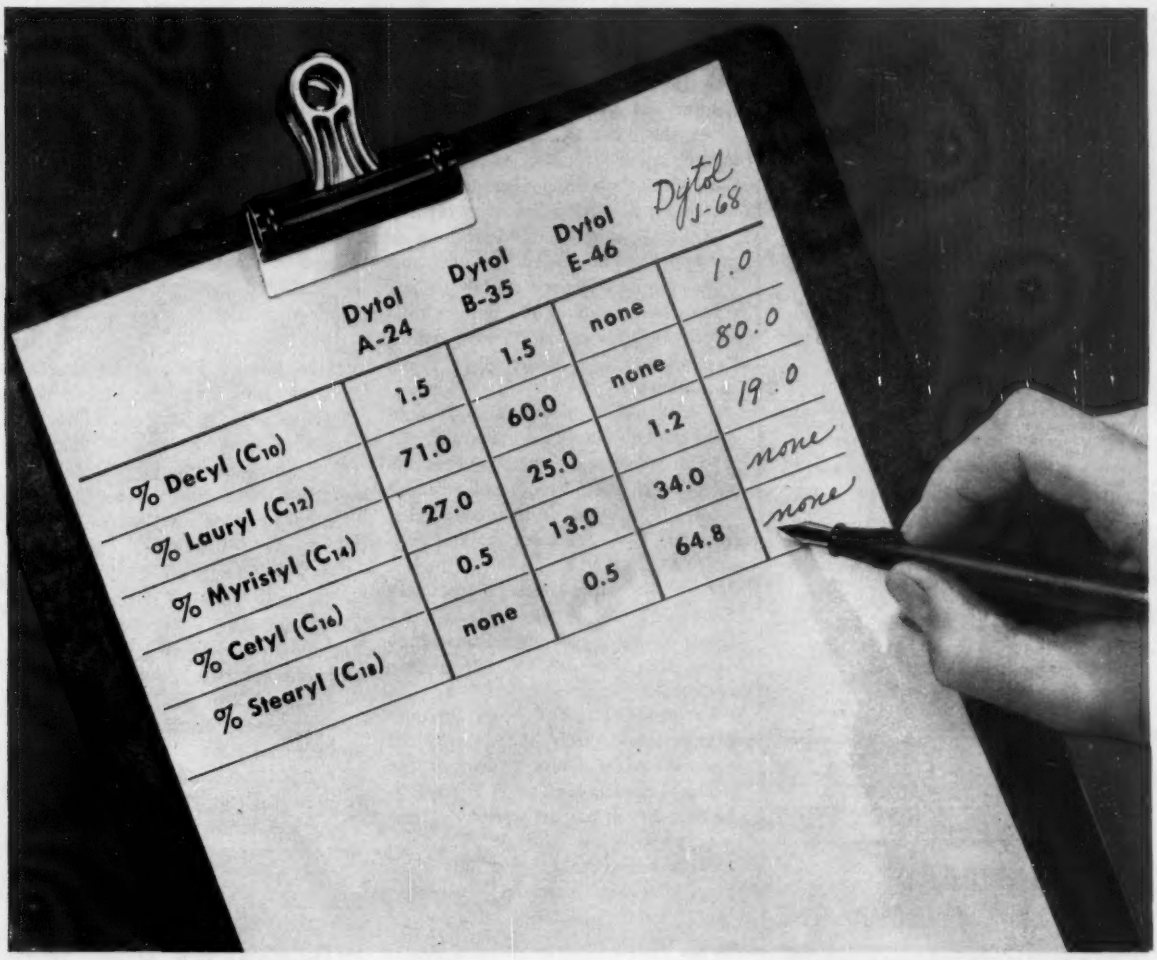
More Foam than Facts

While American manufacturers were setting records last year by selling some 2,317,031,000 lbs. of synthetic detergents, they were looking beyond the rewarding step of collecting over $540 million for it.* They were giving serious concern to the possible effects these million tons of syndets might have on the sewage disposal plants of the nation. The concern seems justified, since detergent consumption is rising; but indications are that the problem has perhaps caused needless worry.

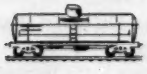
The problem isn't new; stories about sewage plants that have been "foamed" out of commission temporarily by floods of detergent-induced suds have often been in the papers in the past decade. Froth-filled sewage plants make spectacular pictures; other difficulties (sedimentation and coagulation) attributed to syndets can bother a sanitary engineer just as much.

Last week, Procter & Gamble's F. J. Coughlin reported some encouraging news for syndet makers (a report of the technical advisory subcommittee on research to AAS & GP). Some of the highlights of his study:

*Estimates by Assn. of American Soap and Glycerine Producers, Inc.



There's something new in DYTOL Alcohols



With its high lauryl content, DYTOL J-68 promises to be especially valuable as an intermediate for synthetic detergents. This new fatty alcohol means that the DYTOL family now offers the answer to a wide range of product problems.

You'll want to investigate these fatty alcohols if you make cosmetics, polymerization regulators, lubricating oil additives, textile finishing and softening agents, quaternary ammonium compounds, emulsifiers and detergents.

DYTOL alcohols are available in quantity, are known for their high uniform quality. They undergo the reactions typical of alcohols: ethoxylation, sulfation, esterification, halogenation, dehydration and oxidation. Write to Department SP today for more data.

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SPECIALTIES

• Essentially, two components of commercial synthetic detergents might cause the most trouble—the surface-active agent (foam problems) and the complex phosphate builders (sedimentation and coagulation problems).

• So far, most cases of frothing do not appear to be caused by surfactants from commercial preparations (where a housewife needs 3,000 ppm. syndet to provide suds in wash water, typical city sewage has about 10-15 ppm. surfactant).

• Control of the amount of activated sludge solids recirculated through aeration tanks can directly affect the tendency to foam (more solids, more foam). This, first discovered at San Antonio, Tex., has been verified elsewhere.

• In the normal sewage treatment plant, 80-90% of the surface-active agents (alkyl benzene sulfonate, or ABS) are destroyed by the regular treatment.

Tough Detection: A major difficulty in assessing the trouble caused by the syndets lies in determination of the precise amount present in water. In the case of surface-active agents, tests that are available at least provide a working basis, though materials other than ABS can interfere. Currently, several other analytical methods are under development.

In determining the amount of phosphates, however, the problem is much greater, and no sure-fire systems have yet been devised. Until such tests are available, much of the work on phosphate effects must be postponed.

It seems plain that as long as syndets are going to be blamed for a large percentage of sewage disposal plant woes, their manufacturers must continue efforts to find ways to prove them not guilty—or if they should be, to render them acceptable. The investment in syndets is too great to permit any other course.

PRODUCTS

Epoxy Splice: For insulating and weatherproofing electrical cable splices, Woodmont Products, Inc. (Huntingdon Valley, Pa.) is now selling Thoxene Clamp-Coat, an epoxy-base sealant. Distributed as a two-component product, packed in polyethylene, the compound reportedly can be mixed in the field, applied and cured in 2½-3 hours.

Double Duty: Latest in floor products from Armstrong Cork Co. (Lancaster, Pa.) is Armstrong Wax Clean. A combination cleaner and wax, it is designed to eliminate washing and rinsing of floors—it leaves a film of wax when it's wiped away. Now being introduced in the East, it wholesales at 82¢/qt., $2.80/gal.—no suggested retail price is established.

•

Dye Bomb: For refurbishing upholstery, rugs, awnings, and the like, H. Talbot Co. (Cincinnati) has just introduced its Fabric Color. Sold in a 16-oz. aerosol container ($2.99), and available in 16 colors, the dye is said to be water-repellent, fadeproof, and fast-drying (90 minutes).

•

Finishing Touch: Hanson-Van Winkle-Munning Co. (Matawan, N.J.) has just come out with several new buffing compounds for aluminum finishing.

• Liquid Tripoli 303, 420, and 728 are suggested for heavy-duty cutting applications.

• Bar-type buffing aids are compounds 6B-168, 6B-72, and 8390. These are aluminum oxide compounds for very greasy operations.

Teflon's Now a Joiner

FABRICATORS of Teflon, Du Pont's tetrafluoroethylene, can now bond the materials with most commercial adhesives. Normally, Teflon's slicker-than-ice surface keeps it from sticking to anything. To widen the plastic's application, Du Pont has worked out a method of roughing it up, preparing it (in limited areas, if desired) for bonding to metals, wood, or even to itself.

The surface is dulled (other properties are unaffected) by a bath of sodium metal and liquid ammonia. Du Pont, offering the technique free to all processors, says the materials are re-usable and the treatment cost low. One processor—United States Gasket Co. (Camden, N.J.)—is offering a treated Teflon tape, on which the buyer can put any adhesive (pressure-sensitive, if he desires).

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**The Journal of Pharmacology and Experimental Therapeutics—Vol. 104, No. 2, February, 1952*

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PHOTOS—LYN CRAWFORD

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CASE HISTORY method, backbone of Koppers' switch to . . .

Power-Think Training: Spur to Creativity

Within three years, Koppers Co. will spend an estimated $100,000 on some 18 weeks' worth of sales executive development instruction. The best consultants money can buy will be the teachers; some 90 of its highest-paid sales managers will be the students; and marketing-for-tomorrow will be the pitch of each of six unique, tailored-to-Koppers'-needs, three-week programs.

Significance of this move goes far beyond that of "just another management education gimmick." This course is believed to be the first of its kind ever given by a major chemical process industry producer.* Moreover, it's irrefutable recognition of the fact that:

- Present levels of sales administration thinking may be inadequate for future distribution problems triggered by a fast changing economy.
- Marketing men will need the best information on principles and techniques of management.
- Analytical, imaginative problem-solving power must be boosted to form a hard-thinking, hard-hitting, effectively organized and creative marketing management team.

Koppers' answer to these needs is its advanced marketing seminar. By giving its men time to study the knowledge of recognized authorities, opportunity to learn experiences and approaches of others in different divisions, and training in "power" thinking, the company hopes to be ready for the years ahead.

Curriculum: Scope of the course is purposely broad. Generally, a whole day is devoted to each of 13 prime areas of marketing: product planning, pricing, marketing research, marketing philosophy, advertising, sales management, promotion, planning and selling, manpower development, public relations, creative and critical analysis, distribution, and the marketing executive.

Treatment of subject matter is as deep as the course is broad. Using the case history method, "students" work far into the night preparing answers, studying long, carefully selected, assigned reading material.

The following day, "committees" present findings, suggest action. Invariably, others disagree, argue for different solutions. Skillfully, the instructor brings out omissions in thinking and fixes main lessons to be learned from each case. Assisting: sales training manager Robert Gopel.

Most important, sales manager-stu-

*General Electric is giving a similar course.

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dents soon discover parallels in case studies and their current problems, start examining the latter in terms of the newly spotlighted approaches.

Take pricing, for example: in the first three-week session, completed last Friday, one case probed was the situation in which a firm was offered a contract at cost (no profit) in a depressed market.

Some saw an analogy with today's plastics business. Some began to weigh such factors as the moral obligation to keep employees working, the long-term effect of customer goodwill ("we kept you in business").

Customer Is King: Emphasis in these sessions falls heavily on approaching marketing from the customer's viewpoint. "The successful future organization" asserts Gopel, "will have to have creative marketing, products created to actually meet customers' needs." This means "finding out what the customer really wants."

Where practical, case histories point up this concept, show how plans and policies, product development, distributors and advertising must be marshaled to serve customers as well as Koppers.

Stress, nonetheless strong for the indirectness of its presentation, is also given to "broad-spectrum market-thinking." It's Koppers' contention that merchandising men not only will have to know and avail themselves of all aspects of marketing, but also must penetrate all aspects of a given problem. The course develops this through its thorough airing of all subtleties.

Plan for Power: Koppers didn't just go out and shop for a course. Rather, it systematically designed and organized the whole program. Gopel surveyed Koppers' management to determine what areas needed treatment; opinions of companies in other fields that have held training sessions were solicited; a preliminary program was set up. Planned to repeat main points three times, this tentative program was sent to management, and to outside agencies specializing in administrative education, for comment.

The faculty was drawn from top-notch consultants, each chosen for a particular specialty. Instructors include Joel Dean of Columbia, Samuel Stevens and Raymond Thurow of Stevens, Thurow and Associates, Dr. Haggot Beckhart of Columbia, Dr. Richard Clewett of Northwestern, Dr. Harold Maynard of Ohio State, and Charles Whittier of Simonds, Payson Co., Inc. Studiously avoided: the "John Barrymores" of the consultant world, those with the "patented pitch."

Topic leaders of the consultants went to Pittsburgh, spent weeks studying company problems, then lined up program material to match. Books, other material were all carefully chosen.

Leaders of the firm's six operating divisions and central staff marketing department comprised the first group to take the course. Five subsequent sessions (two each year) will be for successively lower echelons.

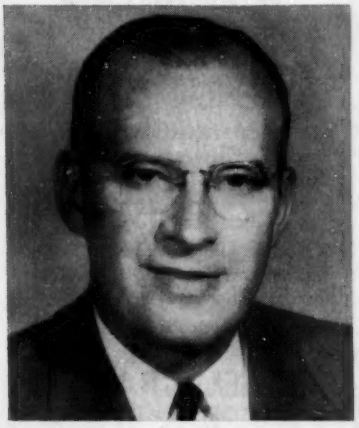
Deliberately, class size is being limited to about 14. And to get away from the cares and interruptions of Pittsburgh headquarters, the course is

BY DAWN this group will have to find an answer to tough sales problem.

being given in the quiet university town of Princeton. (A company plane flies the men home for weekends.)

Results of the program will, naturally, be difficult to assess. But student reaction to date indicates that the "power steering" afforded by the school's hard-think, all-embracive nature will be invaluable.

CCDA Honors . . .



DOW'S BALLMAN, pioneer in sales development.

NEXT MONTH, the importance of commercial chemical development will again be highlighted.

Commercial Chemical Development Assn., the organization most intimate with problems affecting promotion of chemicals from test tube to bulk sales, will re-emphasize its belief in the fundamental importance of such programs by presenting its seventh annual Honor Award to Dow Chemical's general sales manager, Donald Ballman, for his pioneering, leadership and accomplishments in product development. The event is set for March 8 at Hotel Statler in New York.

Ballman's keen interest and work in this field led to formation of a number of new Dow departments, including its Dowicide Sales, Technical Service and Development, and Market Research groups.

He worked on marketing of Dow's line of phenols and related compounds for use in fungicides, germicides, and wood preservatives, and later, because of the similarity of the type of development needed on Methocel (Dow's methyl cellulose).

New ALKYL ARYL SULFONATES by NINOL Cover Broad Molecular Weight Range

Now, a complete range of NINOL alkyl aryl sulfonates—from top to bottom of the molecular weight scale—is available from which to choose the right surfactant for countless applications.

These exceptional NINOL products are useful as *emulsifying or foaming agents, detergents, solubilizers, coupling agents;* and as components of *industrial cleaners, rust inhibitors, cutting oils, lubeoil additives* and many other systems. New uses continually arise.

The products in the NINEX series (lower molecular weight), are *water soluble;* in the NINATE series (high molecular weight), *oil soluble.* Thus, the line is exceptionally flexible in possible adaptations to many purposes, where a range of hydrophilic and hydrophobic properties are important. By blending various members of this group with each other or with nonionic type emulsifiers, any desired balance may be obtained.

NINEX 303

A 40% aqueous solution of sodium xylene sulfonate . . . Now used as a coupling and solubilizing agent in industrial cleaners, where its hydrotropic properties help dissolve detergents in electrolyte systems; to solubilize reactants in the preparation of certain dyes; and for other purposes.

NINEX 300

A 60% aqueous solution of triethanolamine dodecyl benzene sulfonate . . . Excellent for highly concentrated liquid detergents; used widely as a foaming agent in cosmetics and industrial cleaners. Freeze resistant.

NINATE 411

A 95% active alkylamine dodecyl benzene sulfonate . . . Water dispersible and oil soluble, it is an excellent emulsifying agent and solubilizer. Recommended for making clear blends of petroleum solvents and water.

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A 50% solution of calcium dodecyl benzene sulfonate in oil . . . For blends with nonionic surfactants in the manufacture of agricultural emulsifiers and similar products. Also available in more concentrated form (NINATE 401).

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A 60% active sodium alkyl aryl sulfonate in oil . . . High in molecular weight (about 450), it is readily oil soluble, and can be used in rust inhibitors, lubeoil additives, cutting oils, and many other applications.

NINATE 430

A 60% active alkylamine alkyl aryl sulfonate in oil . . . Top of the scale in this series in molecular weight (about 480), it is high in oil solubility. Among many potential uses may be included ashless corrosion inhibitors, gasoline inhibitors, and as an emulsifier component. NINATE 430 is a specialized sulfonate of a type not widely marketed heretofore.

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P9216 Chemical Week 330 W. 42 St. New York 36, N.Y.

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P9218 Chemical Week
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Initiative and character important qualifications.
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P9193 Chemical Week
520 N. Michigan Ave., Chicago 11, Ill.

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wanted for Texas office of national corporation qualified to work with new products, new markets and develop new uses for products. Challenging opportunity for man 27-35 with chemical engineering background with experience in market research and/or product development. Position will carry excellent beginning salary, responsibility, and excellent employee benefits. Your reply should include all pertinent details.

RW 9086 Chemical Week
520 N. Michigan Ave. Chicago 11, Ill.

SALES MANAGER
Assistant

Established Pharmaceutical Chemical Manufacturer requires man to act as assistant salesmanager with promotion to salesmanager after prearranged period. Entails travel. Replies confidential and not considered unless you have sales experience in this field.

P9177 CHEMICAL WEEK
330 W. 42 St. New York 36, N.Y.

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CHEMISTS

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Send resume of educational background (include approximate academic standing) and work experience to:

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P.O. Box 44 Tonawanda, New York
Attention Mr. P. I. Emch
refer to ad CWMS

CHEMICAL PROJECT ENGINEER

Opening available for any engineering graduate with minimum three to seven years' chemical or petroleum plant experience. Should be able to design processes and select equipment; estimate work construction costs and to supervise equipment installation and initial start-up. We offer excellent advancement opportunity in a synthetic resin plant undergoing multi-million dollar expansion program located in beautiful New England community. Send résumé and salary requirements to

P-8969 Chemical Week
330 W. 42 St., New York 36, N.Y.

Sales Manager Polyvinyl Chloride

Nationally known chemical manufacturer entering polyvinyl chloride production seeks experienced man to direct PVC sales. Previous similar experience desirable. Excellent salary, unusual growth prospects in new department. Replies will be held in strict confidence. Apply:

P-9247, Chemical Week
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Plasticizer Production Supervisor Chemist, thoroughly experienced in manufacture of plasticizer for vinyl and applied industries. Salary open. Permanent. Write fully. P-9072, Chemical Week.

Selling Opportunity Offered

Distributors: Revolutionary new industrial detergent of proven quality. Sales expansion program planned. Limited territories available. SW-9082, Chemical Week.

Position Wanted

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DU PONT'S ELLIS: On escalator clauses—guidance and a . . .

Note of Caution

If purchasing agents who attended the National Assn. of Purchasing Agents conferences (Chicago, Jan. 24, New York, Jan. 31) didn't know the pitfalls of using escalator clauses in chemical sales contracts, they should now.

For Du Pont's Ira Ellis, using a combination academic-restatement-of-principles, historical-evolution, how-to-do-it approach, illumined what has been a dark corner of sales contracting.

Reduced to nutshell dimensions, his main thesis was this: escalator clauses, while they help sugar-coat the bitter pill of rising prices, may also be a cause of rising prices. Supporting this thesis, Ellis pointed out that such clauses remove any incentive for cost control by the seller since the increases are passed on to the buyer.

Unjustified wage increases can be granted easily if escalation is based on wage rates. Raw materials price hikes won't be resisted by the seller if his sales contract is escalated on the basis of materials costs.

Actually, Ellis couldn't find much justification for using escalator clauses under peacetime conditions. He pointed out that since Sept. '53, the Bureau of Labor Statistics' Wholesale Price Index of Chemicals and Allied Products has been virtually unchanged. So there's little call for such profit-stabilizing measures as escalation.

Ellis could see justification for escalator clauses when risk is substantial—when a supplier builds a plant or part of a plant for a particular use, with cost to be regained over a long period. In such cases, it might be necessary to include some price protection, since the length of the contract increases the potential risk. Here, however, only wide price swings should be covered, not minor fluctuations. The seller should still take some price risk. Price escalation should be used to hold down the effects of drastic cost increases—not to guarantee a desired profit.

Expert Advice: To clear up some misconceptions and help eliminate a source of strained buyer-seller relations, Ellis outlined some general procedures to follow when incorporating escalator clauses in sales contracts. Specifically his recommendations are:

- Use commodity prices instead of hourly earnings. This passes some of the benefits of increased productivity along to the buyer who, because of his consumption of the material, has made increased productivity possible and profitable.
- If hourly earnings are used as a factor, use straight time. This puts the rise or drop in price on the equitable basis of labor-cost-per-unit-of-output instead of on wage rates alone. In short, don't get penalized for the seller's fringe benefits or fouled up production runs that require overtime.

• As a buyer, test the escalator clause over a recent period and see what its effect would have been under actual operating conditions. Any formula that would result in a price increase greater than that which actually occurred in a particular period should be rejected.

• Provide for possible revision of the formula if factors are revised by the issuing agent. Periodic revisions take place in indices and can throw calculations off. Escalator formula should include provision for adaption to the revised data.

Ellis also advised that base-month, or other period from which the computations start, be clearly stated. And he urged that the formula be expressed so that causes of price increases are readily apparent.

In dealing with sole suppliers on a long-term basis, the best procedure to follow, he said, is to make certain that suppliers quote the same prices given to any other purchasers.

When dealing with a sole supplier on a long-term basis, Ellis advised purchasing agents to request the same price quoted other buyers. Similarly, if any other supplier comes into the field, the purchaser should get the same price as that offered by the new supplier.

Using these yardsticks to measure contracts, purchasing agents should be able to bargain better with their supplier. For those who must live with escalator clauses, his recommendations make possible negotiations on the basis of a realistic price structure rather than on illusionary economics.

Both buyer and seller, ultimate sharers of the economic stability of the nation, can profit by understanding and using Ellis' sales contracting guideposts.

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nological improvement is ignored.

The reason for this, according to Roger Williams Jr., president of the Roger Williams Technical & Economic Services, Inc., is the impossibility of measuring the effect of technological improvement in quantitive terms. This factor can bring prices down slowly like a leaky balloon or send them nose-diving like a spent rocket. Predicting which it will do calls for clairvoyants, not economic theorists.

To illustrate his point, Williams showed the chemical and allied buyers group of the National Assn. of Purchasing Agents what happens when the chemical sales dollar is carefully analyzed. Subjecting all the factors that comprise it to individual scrutiny, adding these together and projecting to 1960, the calculated forecast is a 25% increase in average chemical prices. This figure is obviously way out of line with what usually happens. Using a 30-year case-history of a chemical, Williams showed the difference between prediction and actual performance. While the theoretical price described a steadily rising curve on a graph, the actual price dipped sharply over the first 10 years, stayed on a plateau for the next 10, then rose almost imperceptibly during the next 10.

Ending on an optimistic note, Williams predicted that, on the whole, technological improvements will cancel out otherwise anticipated price rises based on raw material and wage increases over the next five years.

•

Ready for Reference: Chlorinated paraffin—36-p. brochure contains data on physical and chemical nature of Chlorowax, highlights applications in paints, plastics, inks and mastics. Diamond Alkali (Cleveland).

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